

MARE Conference People and the Sea VII

MARITIME FUTURES

JUNE 26-28, 2013
AMSTERDAM



PROGRAMME BOOK





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Word of Welcome

Dear participant,

On behalf of the Centre for Maritime Research (MARE) and the organizing committee of this conference I am pleased to welcome you to the 7th People and the Sea conference in Amsterdam. Ever since their inception in 2001, the international MARE conferences have become a leading social scientific forum for discussion and debate about maritime and coastal issues.

The central theme of this year's conference is 'Maritime Futures'. It addresses the opportunities and constraints for governance and knowledge production regarding maritime regions and populations across the world. Globally, maritime systems are under stress. This not only affects the natural environment and resources, but also increases the vulnerability of people and communities who depend on these systems. The future for users of coastal and maritime resources is uncertain, but carefully targeted governance interventions can make a difference, improving the health of maritime ecosystems and enhancing the wellbeing of coastal and maritime resource users. However, this requires high quality, applied social science that can increase contextual understanding, particularly with regard to the critical drivers of change and the institutional mechanisms for recognizing and dealing with problems and creating opportunities at various scales.

The theme of 'Maritime Futures' is elaborated in five streams: 'maritime knowledge'; 'maritime governance'; 'maritime communities'; 'coastal shocks, disasters and recovery'; and 'fisher wellbeing, human rights, and shifting vulnerabilities'. Besides paper presentations in 43 panels, there will also be poster, video and book presentations.

There will be a keynote address by an internationally prominent scholar or practitioner on each conference day. Mr Rolf Willmann from FAO, Rome, will give a keynote about 'a human rights-based approach in small-scale fisheries' on Day 1, Dr Moenieba Isaacs from the University of Western Cape, South Africa, a keynote about 'small-scale fisheries governance in South Africa' on Day 2, and Dr Kevin St. Martin from Rutgers University, USA, a keynote on Day 3 about 'marine spatial planning and the fate of communities'.

To continue a good tradition, the conference is preceded by a policy day on 25 June, with the theme 'giving small scale fisheries a place: the knowledge and governance challenges'. During this policy day, which is jointly organized with the EU FP7 GAP2 project and the Canadian SSHRC Too big to Ignore project, the pressing condition of small-scale fisheries in Europe will be discussed.



We are very proud that this conference has attracted more than two hundred scholars and professionals in the domains of social sciences, environmental studies, natural resource management and governance studies from both north and south. On Wednesday 26 June, the conference will be opened by the Dean of the Faculty of Social and Behavioural Sciences of the University of Amsterdam. The conference reception on Wednesday, June 26, and the conference dinner on Friday, June 28, at the Dominicus Church, one of the city's remarkable monuments, are open to all participants and will provide opportunities to meet colleagues and enjoy good drinks and food. The Best Student Paper Award will be presented during the dinner.

I wish you a very inspiring conference and a very pleasant stay in Amsterdam.

Prof. Dr. Ir. Jan P.M. van Tatenhove,

Co-Director of MARE
Chair of the organizing committee

General Information about the conference

Sponsors



Gemeente Amsterdam



UNIVERSITETET I TROMSØ UIT



CERES
RESEARCH SCHOOL FOR
RESOURCE STUDIES
FOR DEVELOPMENT

Conference Committee



Chair committee: Jan van Tatenhove
Conference organizer: Silke Hoppe
Core committee: Maarten Bavinck
Marloes Kraan
Committee: Sarah Coulthard
Svein Jentoft
Derek Johnson
Iris Monnereau
Douglas Wilson



Information and Services

Registration

On Wednesday June 26th you can register between 8.30 and 9.30 a.m. at the Aula where the opening ceremony takes place. On Thursday 27th and Friday 28th you can register, preferably before 9.00, at the information desk at the central hall of the E-building.

Information desk

An information desk will be open in the main hall of building E, throughout the conference, for any questions or information. Mare volunteers will be available to answer your questions and are recognizable by their blue MARE t-shirt.

Money withdrawal

There is cash dispenser in the hall of building E.

Lunch

Lunch will be provided in the E-building, in the central hall and in the university canteen.

Venues and Maps

Overview of conference venue and locations:



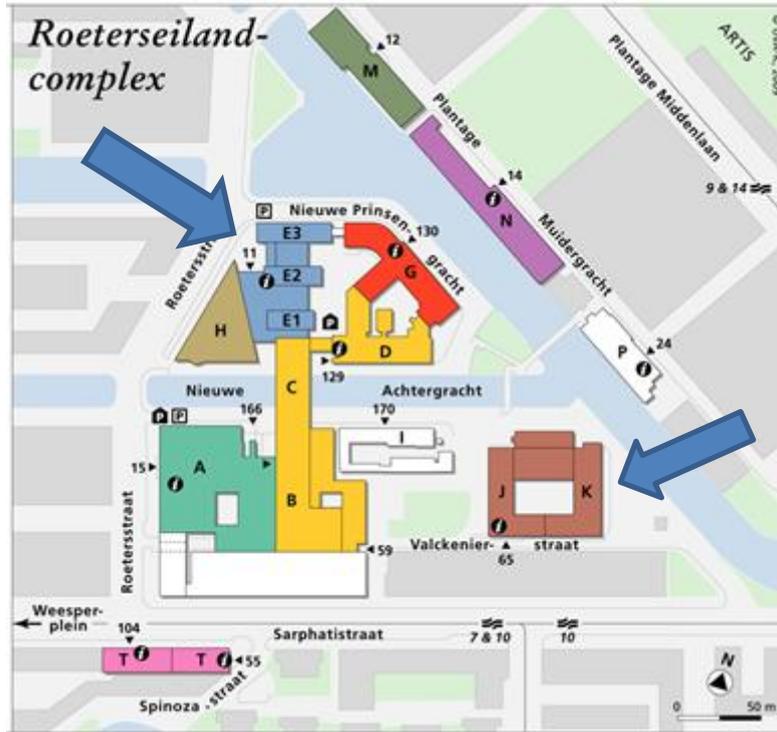
Main conference venue: turquoise (for lunch, and tea-coffee breaks) (Roetersstraat 11) & yellow (all panel sessions) (Valckenierstraat 65-67)

Opening conference and 1st Keynote on Wednesday: green (Aula: Singel 411)
Keynote speeches on Thursday and Friday: blue (Oudemanhuispoort 4-6)

Conference dinner on Friday: red (Spuistraat 12)



Roeterseiland complex (Main conference venue)





Internet Information

Dear guest,

During your attendance of the MARE Conference at the University of Amsterdam (UvA) you can make use of the Wireless Network Service. The following user account has been created for you

Username: mareconference-gpio@uva.nl

Password: f4bqRGH1

Valid From: 26-Jun-2013 06:04

Valid To: 28-Jun-2013 23:59

Timezone: Europe/Amsterdam

Wireless Network Service

As a guest you can use the Wireless Guest Network Service. As a congress visitor you can use the Congress Network Service of the University of Amsterdam.

Wireless Connections

Please connect either to the network "SSID = UvAGuests" or the network "SSID = UvACongress". Then open a web browser. You will be automatically re-directed to the appropriate login page, where you can enter the username and password above. You can connect to the UvA Wireless Network only from inside UvA buildings.

Before you access the Wireless network, take note of the following:

- Make sure that you have installed the latest updates for your network card driver.
- Be aware that the Guest network is an open and unsecured network.
- To avoid risks and optimise security, make sure you have installed the latest updates for your virus scanner and all security patches.

Further Assistance

You can find a manual that explains how to connect to the Guest/Congress Network on the UvA web [www.ic.uva.nl/uvaguests]. If you require further assistance, please contact the conference desk in the E-hall.

Music

During the conference opening on Wednesday, 26th of June

The opera *Rusalka* (1900) by Antonín Dvořák (1841-1904), largely based on Hans Christian Andersen's famous fairy tale *The Little Mermaid*, is about the water nymph Rusalka, who falls in love with a human prince.

Previously in this opera, Rusalka made a deal with the witch Ježi Baba to give up her voice in order to become human, despite her father warning her not to abandon her life in the lake. Part of this deal is that Rusalka has to marry her prince - if she fails, she will turn into a deadly ghost, luring innocent people into the water.

The prince loves Rusalka and agrees to marry her, so all seems to go well. But since Rusalka cannot speak anymore, the prince starts to doubt his love and is then seduced by another woman, who uses sorcery to bind him to her.

At this point, Rusalka's father, the king of the lake, comes out of the water and watches his daughter's pain. Full of sympathy for her, he sings this aria.

Běda! Běda!

Ubohá Rusalko bledá, v nádheru světa zakletá!

Běda!

Celý svět nedá ti, nedá,

vodní čím říše rozkvétá!

Stokrát bys byla člověkem,

ve jhu jsi spjata odvěkem.

Byť měl tě člověk stokrát rád,

navždy ho nemůžeš upoutat!

Ubohá Rusalko bledá, zajatá v kouzlo lidských
pout!

Voda tvá všude tě hledá,

nadarmo chce tě obejmout!

Až se zas vrátíš k družkám svým,

budeš jen živlem smrtícím,

Vrátíš se žitím uvadlá,

prokletí živlů jsi propadla!

Ubohá Rusalko bledá, v nádheru světa zakletá!

Woe! Woe!

Poor, pale Rusalka, cursed in the beauty of the
world! Woe!

The whole world cannot give you what the
underwater empire is flowering with

Even if you would be human a hundred times,
deep down you're connected to your roots.

Even if a human would love you a hundred
times, you cannot keep him forever!

Poor, pale Rusalka, captured in charm's bond!

Your water is looking for you everywhere,
Wastfully it wants to embrace you!

When you return to your girlfriends,

You will be a deadly spirit,

You will return to a wilted life,

Turned into a cursed spirit.

Poor, pale Rusalka, cursed in the beauty of the
world!

Bass-baritone Allard Veldman studied at the Utrecht Conservatory with Jón Thorsteinsson, where he graduated in 2013. In opera, he sang the roles of Papageno (*Die Zauberflöte*) and Il conte Almaviva (*Le nozze di Figaro*). In concert, he sang solo parts in a number of Bach cantatas and in Karl Jenkins' mass *The Armed Man*.

Thom Jansen (Amsterdam, 1953).

Resident pianist/organist/composer of the Dominicus Church since 1970.

He has accompanied many (solo) singers and choirs; his last organ recital was in the St. Peter in Rome in May 2013.

During the conference dinner on Friday, 28th of June

Music by 'people of the sea'

During dinner we will be treated on two pieces of music played by two marine scientists. Marieke Verweij (piano) and Christine Röckmann (violin) will play the first two parts of the Sonatine in D majeur of Schubert. Christine (geo-ecologist and oceanographer) and Marieke (marine biologist) both have been working in interdisciplinary and multi-stakeholder settings.

Cultural programme

On Wednesday we will be travelling by boat on the canals from the Aula to the University campus. This trip is offered to us by the local government of Amsterdam, as a welcome to you all to Amsterdam. Exploring Amsterdam from the water, is one of the best ways to appreciate its beauty. Three boats of Reederij P. Kooij will be waiting for us after the opening ceremony at 11.45 hours at the Rokin. The MARE volunteers will accompany you to the quay.



Amsterdam

Amsterdam draws in a large tourist crowd and is well known for its 17th century canal belt, which is now a UNESCO world heritage site. It is worthwhile just to take a stroll through the old inner city or along the canals and adjacent streets. Amsterdam also has a wide range of interesting museums, historical monuments and art galleries. For those of you who don't mind a bit of crazy traffic, explore the city by bicycle or, if you rather like sitting down while taking in the scenery, take a boat tour across the old city.

Museums

With over 40 museums, Amsterdam has a wide variety to choose from. Here is a selection of the best Amsterdam has to offer:

- *The Amsterdam (history) Museum*: A museum that highlights the Amsterdam of the past as well as of today. It has a rich collection of art, objects and archaeological finds that offer a tangible link to the past. Besides the permanent exhibition 'the story of Amsterdam', the museum also organizes temporary exhibitions, like the project 'Buurtwinkels': the past and present of Amsterdam's local shops. Address: Nieuwezijds Voorburgwal 357/ Kalverstraat 92
- *Van Gogh Museum*: The museum contains the largest collection of paintings by Vincent van Gogh in the World. Open daily 09:00- 18:00 (Friday till 22.00) Address: Paulus Potterstraat
- *Het Rijksmuseum*: The Museum just reopened recently and contains several masterpieces. Open daily 9:00- 17:00 Address: Museumstraat 1

- *Het Stedelijk Museum*: The Museum for modern art focuses on the renowned collection of modern and contemporary art and design. Open daily 10:00-18:00 (Thursday till 22.00) Address: Museumplein 10
- *Anne Frank Huis*: The house where Anne Frank went into hiding and wrote her world famous diary. Open daily 9:00- 21:00 Address: Prinsengracht 267
- *Joods Historisch museum*: History and culture of Jews in the Netherlands. Open daily 11:00- 17:00 Address: Nieuwe Amstelstraat 1

Public transport

It is convenient to travel within Amsterdam using the public transport system. The tram, busses or the metro can take you pretty much everywhere in the city. All public transportation uses the OV-chipkaart, an electronic travel card with a chip. You can buy the card from GVB info desks or machines at most train stations, and you can then charge the card with credit. If you only go with public transport once or twice, it is cheaper to buy a disposable chip card (valid for one hour) from the tram or bus conductor. The public transport company also offers 1-7 days unlimited travel through Amsterdam. A comprehensive list of OV-chipcards and prices, check www.gvb.nl

Bicycle rental

On a warm summer day there is nothing like cycling through the city, taking in the scenery and the summer breeze. Here are some options for bike rentals:

Macbike: Centraal Station, Leidseplein, Waterlooplein *Starbike rental*: Behind Centraal station, on the right-hand side

Rent a bike: Damstraat 20-22

Taxis

Taxi central Amsterdam (TCA) is the largest taxi company and a reliable one. TCA can be reached 24 hrs. a day, telephone number 020-7777777 (that's 7x7). Taxi rates start at €7.50 and include up to two km. at this price.

Events in Amsterdam

If you are interested in what else is going on in Amsterdam, you will find a list of festivals, theater, music, exhibitions on the Amsterdam website:

www.iamsterdam.com

General Information about the Programme

Maritime Futures

“Maritime Futures”, the central theme of the 7th MARE People and the Sea conference, addresses the opportunities and constraints for the development of maritime governance, knowledge production maritime communities and maritime regions.

Globally marine and fisheries systems are under stress. This not only affects the natural environment and resources, but also increases the vulnerability of people and communities who depend on these systems. The future for users of coastal and maritime resources is thus uncertain, but carefully targeted governance interventions may yet generate good options for improving the health of maritime ecosystems and enhancing the wellbeing of coastal and maritime resource users. Effective governance, however, requires high quality applied social (and natural) science that can increase contextual understanding, particularly with regard to the critical drivers of change and the institutional mechanisms for recognizing and dealing with problems and creating opportunities at various scales.

Maritime knowledge production is no longer the domain of biologists and economists alone, social scientists are increasingly invited to co-produce maritime knowledge. More broadly, not only scientists play a role but increasingly society, maritime businesses and NGOs create new frontiers in knowledge production. Collaborative knowledge production is needed for the development of legitimate and sustainable fisheries and maritime policies.

Emerging issues are physical changes and political and economic developments around the Arctic and on the high seas. These are generating new opportunities and new spheres of authority but also new relations of accountability to deal with a diversity of problems resulting from growing maritime activities and conflicts.

As reflected in the conference themes, the aim of the 7th MARE conference is to explore these new frontiers at sea and in coastal areas.

Conference themes:

Knowledge Production

This theme brings together the different approaches and tools that are currently used in coastal and marine resource management that develop (or block) the creation of an integrated knowledge base for management. It seeks to contrast and compare their use across different contexts and disciplinary perspectives and to illuminate the roles of knowledge negotiation and the creation of science-policy boundary objects. We particularly invite scientists to reflect upon integrative approaches to knowledge production such as working together with society (sectors, NGO's) to produce knowledge and develop it for use in decision making. This may involve scientists working together in an integrative multidisciplinary or transdisciplinary ways. Research and critical thinking on the role of social scientists and social science in the production of a management knowledge base would also be very welcome.

Maritime Governance

Negotiating policies for maritime resource use. This theme focuses on new frontiers of maritime governance giving particular attention to aspects of negotiation, consensus building, and legitimacy in integrated maritime policies for regional seas and coastal areas. We are interested in how different policies for regional seas and coastal zones are developed, whose voices are heard, aspects of power, procedural justice, examples of good and bad practices, and consequences of policy contestation. We are also interested in articles, which discuss management approaches, such as Marine Spatial Planning, Coastal Zone Management, ecosystem-based management, wealth-based and rights-based approaches, and more specific management tools such as marine parks, ITQs, and quota regimes.

Maritime communities

This theme continues the long standing attention of the MARE conference series to maritime anthropology and the cultural meanings that people associate with the sea and the coastal zone. Papers in this theme may relate to occupational specializations, such as fishing, coastal tourism, aquaculture, or oil rig work. They may also branch into cultural or political ecology, history, film or literary analysis. Documentaries could be included in the programme. As the journal MAST will be celebrating its 25th anniversary at the conference, we also welcome papers that might fit into a panel or panels organized broadly around the themes that MAST has covered over its publication history.

Coastal shocks, disasters and recovery

This theme focuses on the reactions of coastal and maritime systems to shocks and how science, policy and coastal communities deal with sudden change. As change may have natural (tsunamis, climate change, etc.) or social (policy, demographic developments, etc.), origins, contributors might address topics such as oil spills, fishing bans, resource collapse, the global recession or natural disasters affecting the coastal zone. Enquiries might highlight policy processes, law, power equations, the role of government, or of civil society.

Fisher wellbeing, human rights, and shifting vulnerabilities - challenges and opportunities.

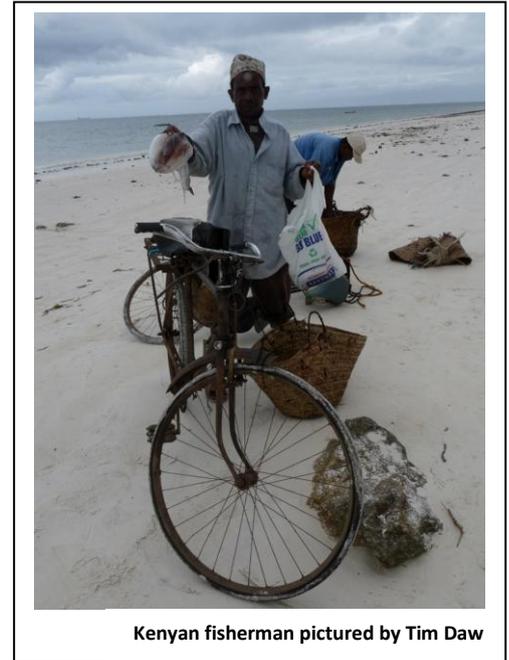
This theme addresses the challenges of poverty alleviation and the securing of human rights in fisheries in the context of diminishing resources, changing access to resources, and fast-paced coastal development trends. How do these changes affect the current and future wellbeing of fishing dependent people, what are the implications for vulnerability, human rights and justice, and how can new knowledge on these aspects contribute to fair and sustainable policy options? This theme seeks to attract papers which address poverty in fisheries in north and south; human rights-based approaches in fisheries; aspects of social justice; and quality of life and wellbeing in fishing communities. We also encourage papers which have a gender focus, recognizing that change in fisheries can affect men and women differently, and can inspire a range of coping reactions and strategies.

Art exhibition

People and the Sea Exhibition of Photography and Film

This year we have a People and the Sea exhibition of photography and film, located in the REC –E Hall (where lunch is served). Photo exhibits will be on display in the viewing area for the duration of the conference. Film documentaries will be screened during the lunch period (1.30-2.30pm) according to the following schedule. Exhibitors will be on hand to answer any queries and further contact details are provided below.

Exhibitors are kindly reminded to leave their exhibits with the registration team by Wednesday 26th June, 09:00 a.m.



Kenyan fisherman pictured by Tim Daw

Photography exhibitions

Rec-E Hall

Landscapes of fishing

Exhibitors: Tim Acott and Julie Urquhart, University of Greenwich, United Kingdom

Contact details: at05@greenwich.ac.uk

A showcase of images portraying the vibrant and diverse landscapes of fishing in the southern North Sea and English Channel, forming part of the Interreg 2 project GIFS (Geography of Inshore Fishing and Sustainability).

Small-scale fisheries in Indonesia

Exhibitor: Eny Buchary, Stockholm Resilience Centre, Stockholm University, Sweden

Contact details: eny.buchary@stockholmresilience.su.se

An exhibit of two sets of photo collage, that depicts small-scale tuna fisheries in Indonesia (Collage 1), and small-scale jellyfish fisheries in Indonesia (Collage 2).

Aspects of life in South Asian fisheries

Exhibitors: Sarah Coulthard, Nasheera Paranamana and K.P.L Sandaruwan, Northumbria University UK

Contact details: sarah.coulthard@northumbria.ac.uk

A series of photographs depicting aspects of wellbeing, and illbeing, in fishing communities in Sri Lanka and India, to compliment the panel session on 'Wellbeing in fisheries in South Asia' – WellFish project.

Fishing livelihoods in Equatorial Guinea, Central Africa.

Exhibitor: Denis Hellebrandt, University of East Anglia, United Kingdom

Contact details: d.hellebrandt@uea.ac.uk

The exhibit aims to show the diversity of roles played by women and men in building livelihoods based on coastal resources - the photos document the fisherfolk, their tools and practices, and offer an invaluable window into the current state of small-scale fisheries in Equatorial Guinea.

Participatory Modelling of Wellbeing Trade-offs in Coastal Kenya (P-MOWTICK)

Exhibitor: Tim Daw, Stockholm Resilience Centre

Contact details: tim.daw@stockholmresilience.su.se

Photographs of the ESPA funded 'Participatory modelling of wellbeing trade-offs in coastal Kenya' project, including portraits of key stakeholders working in the fishery, as well as moments in the participatory processes which are described by the film (see below). To complement the corresponding P-MOWTICK panel session.

Film Documentaries

REC-E 0.20

Screenings: Thursday 27th June, 1-2.30pm, Location: REC –E Hall

The Business of Fishing

Duration: 18 minutes

Exhibitors: Anne-Margaret Stewart and Dani Sewell, Sea Fish Industry Authority, Scotland

Contact details: a_stewart@seafish.co.uk

The Business of Fishing features four fishing vessel owners from different fisheries in areas around the UK as they talk about the day-to-day and the strategic challenges of running a successful business as part of the UK fishing industry. A great deal of progress has been made by the UK fishing fleet in recent years in terms of their responsible approach to fishing in an environmentally friendly way and this short film highlights how business owners have approached that challenge. We hope that this film will help further mutual understanding between the fishing industry and environmental organisations so that they will be able to work together more

effectively in the future, identifying solutions that deliver the environmental benefits that the industry relies on and that are workable from a business point of view.

Participatory Modelling of Wellbeing Trade-offs in Coastal Kenya (P-MOWTICK)

Duration: 12 minutes

Exhibitor: Tim Daw, Stockholm Resilience Centre

Contact details: tim.daw@stockholmresilience.su.se

A short film describing the project 'Participatory modelling of wellbeing trade-offs in coastal Kenya (P-Mowtick)' through interviews with participants and videos of interactive sessions.

Shifting Undercurrents: Seaweeds Collectors of Gulf of Mannar, India

Duration: 20 minutes

Exhibitor: International Collective in Support of Fish workers (ICSF), Chennai, India.

Contact details: icsf@icsf.net [website : www.icsf.net]

An award winning documentary filmed by ICSF India, which provides a moving account of women divers/seaweed collectors struggling to regain a hold on their much-curtailed activities in the Gulf of Mannar Marine National Park off the south Indian State of Tamil Nadu.

Screenings: Friday 28th June, 1-2.30pm, Location: REC –E Hall

My village, my lobster

Duration: 60 minutes

Exhibitors: Brad Allgood, Joshua Wolff and Iris Monnereau

Contact details: monnereau@hotmail.com

Trailer: <http://www.youtube.com/watch?v=jKVTTThc3gbM>

This is the powerful and shocking story of the indigenous Miskito lobster divers along Nicaragua's Atlantic Coast who risk their lives diving for the region's most lucrative resource – the Caribbean spiny lobster. Along Nicaragua's Miskito Coast, commercial lobster diving is the largest industry, employing over 5,000 Nicaraguans, mostly indigenous Miskito Indians. It's an industry that affects the livelihoods of 50,000 men, women and children, and contributes millions of dollars to the regional economy. Since the early 1990s, over 90% of the lobster caught in Nicaragua has been exported to the United States and sold via international distributors to supermarkets and restaurant chains. Over the past 10 years lobster stocks have become increasingly overexploited, thereby intensifying fisheries pressure on the resource. As a result, hundreds of Miskito lobster divers have died, and thousands more have become paralyzed from decompression sickness, a diving-related condition commonly known as the bends. The bends has created an epidemic of decompression disease that has remained largely ignored by the Nicaraguan government and international community. Through the voices of Miskito lobster divers and their families, as well

as boat owners, captains, and doctors, MY VILLAGE, MY LOBSTER tells the story of an industry and a community in crisis.

Fishing for Carpets

Screening time: Friday 28th June, 1.30-2.30pm, Location: REC –E Hall]

Duration: 8 minutes

Exhibitor: Nick Hill (ZSL): nickaohill@gmail.com and Miriam Turner: Miriam.Turner@interface.com

Websites: www.zsl.org/net-works, and www.interfaceneteffect.com

Nine thousand kilos of discarded fishing nets have been collected for recycling into carpet tiles, drastically transforming littered beaches along the Danajon Bank, Philippines! This short film documents a year-long pilot project 'Net-works' run by conservationists at the Zoological Society of London (ZSL), global carpet tile manufacturer Interface, and local partners, which heralds a new approach to saving our seas from discarded fishing nets. Located in the Philippines, Net-Works has so far involved 892 local fishers and their families combing nearby beaches to collect fishing nets, which they then exchange for payment at local community banks created for the project. For every two and a half kilos of nets collected, villagers receive enough money to buy a kilo of rice - providing an extra meal for a family of 5 in a place where many families struggle to eat 3 times a day. Additionally, the community banks provide basic financial support so families can save extra money to improve their financial security.

Public 'People and the Sea' Award

Every two years, MARE selects a person or organization that has made a contribution to public knowledge and debate regarding 'people and the sea' in the Netherlands. In the past, we commended a television programme (Klootwijk aan Zee), and an author (Chantal van Dam). This time we have selected the renewed maritime museum in Amsterdam for an award.

From the Jury Report (May 2013):

The renewed maritime museum Amsterdam is a source of inspiration for young and old: collections by theme (seascapes by painters, globes, ship models, modern ports and maritime and marine worlds) are placed in the right order. There is a beautiful reconstructed passenger's "reading" room dedicated to photo albums and photographic memorabilia. Multimedia is lavishly employed without overwhelming the innocent visitor. The west wing is largely reserved for children but adults can also learn something (whaling). Outside the building, inter alia, a replica of the VOC ship Amsterdam is moored. Therefore the 2013 People and the Sea Award will be granted to this institution.

The Maritime Museum

Open: Daily from 09.00-17.00

Address: Kattenburgerplein 1, 1018 KK Amsterdam

Website: <http://www.hetscheepvaartmuseum.nl/themuseum/welcome|en>

Content of the Programme

General Overview programme

Wednesday 26th of June

Chair: Prof. Dr. Joyeeta Gupta

Aula	08:30 - 09:30	Registration and coffee
Aula	09:30 - 10:30	Opening ceremony: Prof. dr. Edward de Haan
Aula	10.30 - 11.30	Keynote speech: Mr. Rolf Willmann (FAO)
Rokin	11.45 - 12.45	Boat trip from Aula to Roeterseiland
E-Hall	12.45 - 14.00	Lunch Break
E-Hall	13.30 - 14.00	Book Presentations
REC-JK	14.00 - 16.00	Panel sessions (Series 1)
E-Hall	16:00 - 16:30	Tea/coffee break
REC-JK	16:30 - 18:30	Panel sessions (Series 2)
E-Hall	18.30 - 19.30	Reception

Thursday 27th of June

Chair: Dr. Luc van Hoof

OMP	09:00 - 10:00	Keynote speech: Dr. Moenieba Isaacs (University of Western Cape, South-Africa)
	10:00 - 11:00	Walking/Coffee/tea break
REC-JK	11:00 - 13:00	Panel sessions (Series 3)
E-Hall	13:00 - 14:30	Lunch break
E-Hall	13.30 - 14.30	Poster Presentations and Art Exhibition
REC-JK/H/P	14:30 - 16:00	Panel sessions (Series 4)
E-Hall	16:00 - 16:30	Tea/coffee break
REC-JK/H/P	16:30 - 18:30	Panel sessions (Series 5)

Friday 28th of June

Chair: Prof. dr. Isa Baud

REC-JK	09:00 - 11:00	Panel session (Series 6)
E-Hall	11.00 - 11.30	Tea/coffee break
REC-JK	11.30 - 13.00	Panel session (Series 7)
E-Hall	13.00 - 14.30	Lunch break
E-Hall	13.00 - 14.30	Poster Presentations and Art Exhibition
REC-JK	14.30 - 16.30	Panel session (Series 8)
E-Hall	16.30 - 17.30	Tea/coffee break/Walking
OMP	17.30 - 18.30	Keynote speech: Dr. Kevin St. Martin (Rutgers University, USA)
Dominicus	19:30 - 23:00	Conference dinner

Addresses:

Aula: Singel 411, 1012WN Amsterdam

REC-E: Roetersstraat 11, 1018 WB Amsterdam

REC-JK: Valckenierstraat 65-67, 1018 XE Amsterdam

REC-H: Roetersstraat 13, 1018 WB Amsterdam

REC-P: Plantage Muidergracht 24, 1018 TV Amsterdam

OMP: Oudemanhuispoort 4-6, 1012 CN Amsterdam

Dominicus Kerk: Spuistraat 12, 1012 TS Amsterdam

Overview Panels

Wednesday, 26th of June

Times	1.1. Governance Roundtable Governability	1.2. Wellbeing Panel "Trade"	1.3. Knowledge Panel "Participatory fisheries"	1.4. Governance Panel "Small scale fisheries"	1.5. Shocks Panel "Hurricanes and Tsunamis"
Chair	<i>Chuenpagdee</i>	Nayak	<i>Stephenson</i>	<i>Pascual</i>	Medeiros (req.)
Room	REC-JK 1.18 (48)	REC-JK B.46 (45)	REC-JK 3.05b (48)	REC-JK 1.83 (42)	REC-JK 1.90 (40)
14.00-16.00	Kooiman	Buchary (Crona)	Kraan	Frangoudes	Balaraman
	Jentoft	Hellebrandt (nr.2)	Paul	Pascual	Novak (nr.1)
	Bavinck	Rachmawati (nr.2)	Mackinson	Delaney	Becker
	Chuenpagdee		Wiber (Parlee)	Natale	Oberg
	Symes (NR)		Vidal (Pita)		
			Rochette (Stephenson)		
			Pastors		

Times	2.1. Panel "Governance general (1)"	2.2. Wellbeing Panel "Added Value"	2.3. Knowledge Panel "Methods"	2.4. Governance Panel "Artisanal Fisheries between tradition and modernity"	2.5. Shocks Panel "Vulnerability"
Chair	<i>Van Tatenhove</i>	<i>D. Johnson</i>	<i>Kraan</i>	<i>Nauen</i>	<i>Monnereau</i>
Room	REC-JK 1.18 (48)	REC-JK B.46 (45)	REC-JK 3.05b (48)	REC-JK 1.83 (42)	REC-JK 1.90 (40)
16.30-18.30	Vivekanandan (strong societies)	Coulthard	McGregor	Palomares	Allison
	Stead	Sandaruwan	Röckmann	Belhabib	Monnereau
	Korbee	Paranamana	Jarre	Sall	Lokuge
	Solås	Howard	Galafassi		Schuttenberg
					Novak (nr.2)

Thursday, 27th of June

Times	3.1. Governance Panel "MPA/MSP"	3.2. Wellbeing Panel "Eco-system services and wellbeing"	3.3. Knowledge Panel 3 Expertise	3.4. Governance Panel Governance general (2)	3.5. Governance Panel "Governmentality"
Chair	<i>Pascual (req.)</i>	<i>Daw</i>	<i>Stead (req.)</i>	<i>Van Tatenhove</i>	<i>J.P. Johnsen</i>
Room	REC-JK B.11 (88)	REC-JK 1.83 (40)	REC-JK 1.19 (48)	REC-JK 1.90 (40)	REC-JK 3.05b (48)
11.00-13.00	Abernethy	Abunge	Dubois	Toonen	Johnsen
	Gerhardinger	Daw	Trouillet	Arbo	Brattland
	Goldsborough (nr2)	Turner	Forster	Baker	Sønvisen
	Pieraccini	Wallner	Linke (nr.1)	Hadjimichael	Standal
	Ferrer	Pinheiro (Almeida)	Smith	Van Tatenhove (nr. 1)	Tveiteras

Times	4.1. Governance Panel "Best Tuna (1)"	4.2. Wellbeing Panel "Leontine Visser Panel"	4.3. Knowledge Panel "knowledge production in action (1)"	4.4. Communities Panel "Sense of Place"	4.5 Shocks Panel "Don't Rock the Boat"	4.6. Knowledge Production "Methods to measure"
Chair	<i>Bailey</i>	<i>Bavinck</i>	<i>Stange</i>	<i>Urquhart</i>	<i>McConney</i>	<i>Sundblad</i>
Room	REC-JK B.11 (88)	REC-JK 1.83 (40)	REC-JK 1.19 (48)	REC-H HK 0.3 (48)	REC-P0.17	REC-P0.20
14.30-16.00	Bush	Adhuri (nr2)	Degnbol	Acott	McConney	Lempe
	Campling	Vivekanandan	Holm (nr 1)	Rogelja	Pena	Hoefnagel
	Ram-Bidesi	Bavinck	Linke (nr.2)	Stephen	Medeiros	Sundblad (Grimvall)
				Urquhart		

Times	5.1. Governance Panel "Best Tuna (2)"	5.2. Wellbeing Roundtable "International Guidelines"	5.3. Knowledge Panel "knowledge production in action (2)"	5.4. Communities Panel "Transitions"	5.5. Governance Panel "Communities"
Chair	<i>Bailey</i>	<i>Willmann</i>	<i>Stange</i>	<i>D. Johnson</i>	<i>St. Martin</i>
Room	REC-JK B.11 (88)	REC-JK 1.18 (48)	REC-JK 1.19 (48)	REC-H HK 03	REC-P0.17
16.30-18.30	Adolf	Willmann	Knol	Ounanian	Galappaththi
	Macusi	Jentoft	Pastoor	Rachmawati (nr.1)	Chaigneau
	Bailey	Isaacs	Stange	De la Torre	Thomas (Almeida)
	Hanich			Duggan	
			Idrobo (Johnson)		

Friday, 28th of June

Times	6.1. Governance Panel "ODEMM (1)"	6.2. Wellbeing Panel "Engaging Gender"	6.3. Knowledge Panel "Partnerships" + Knowledge Panel 3 European fisheries	6.4. Governance Panel "Ecosystem-Based Management/Small scale"	6.5. Governance Panel "Information Gap"
Chair	<i>Van Leeuwen</i>	<i>Britton</i>	<i>Sowman</i>	<i>Jentoft</i>	<i>Kolding</i>
Room	REC-JK 1.18 (48)	REC-JK B.46 (45)	REC-JK 1.19 (48)	REC-JK 1.83 (42)	REC-JK 1.90 (40)
09.00-11.00	Intro Van Leeuwen and Raakjaer	Mathews	Sowman	Adhuri (nr1)	Kolding
	Jouanneau	Allison et al.	Stepanova	Mwaipopo	Van Zwieten
	Van Hoof	Lentisco	Quirijns	Hara	Vivekanadan
	Hendriksen nr.2	Vivekanandan	Veldhuizen	Girard	Solis Rivera
	Van Tatenhove (nr.2)			Nayak	

Times	7.1.1 Governance Panel "ODEMM nr (2)"	7.2. Wellbeing Panel "Engaging Gender"	7.3. Celebrating MAST Panel	7.4. Shocks Panel "Fisheries Livelihoods"	7.5. "Images of the coast: converging and conflicting visions"	7.6. Wellbeing Panel "Change and adaptation (1)"
	<i>Van Leeuwen</i>	<i>Britton</i>	<i>Verrips</i>	<i>Forster</i>	<i>Song</i>	<i>J.P. Johnsen (req.)</i>
Room	REC-JK 1.18 (48)	REC-JK B.46 (45)	REC-JK 1.19 (48)	REC-JK 1.83 (42)	REC-JK 1.90 (40)	REC-JK 1.05 (78)
11.30-13.00	Raakjaer	Zhao	Acheson	Shapovalov	Song	Hellebrandt (nr.1)
	Freire-Gibb	Britton, E.	Jentoft	MacDonald	Barragán	Katikiro (nr.1)
	Hendriksen (nr.1)	Britton, NC	Johnson	Scholtens	Allen	Ilic
			Van Ginkel			Rubinoff
						Stacey (nr.2)

Times	8.1. Governance Panel European Marine Ecosystem Governance: Cases from Europe's Regional Seas	8.2. Wellbeing Panel "Change and adaptation (2)"	8.3. Knowledge Panel "Sea Sight"	8.4. Communities Panel "South East Asia"	8.5. Governance Panel "Fisheries Management"
Chair	<i>Delaney/Frangou des</i>	<i>D. Johnson</i>	<i>Pastors</i>	<i>Iwabuchi (req.)</i>	<i>Hegland (req.)</i>
Room	REC-JK 1.18 (48)	REC-JK B.46 (45)	REC-JK 1.19 (48)	REC-JK 1.83 (42)	REC-JK 1.90 (40)
14.30-16.30	Krueger	Katikiro (nr.2)	Kraan (nr.2)	Iwabuchi	Hegland
	Piowarczyk	Tull	Goldsborough (nr.1)	Pauwelussen	Crona
	Magni	White	Soma (Steenbergen)	Stacey (nr.1)	Eliassen
	Frangoudes/Delaney		Kraan (nr.1)		Van Riel (Bush)
					Holm (nr.2)

Keynote Speakers

Rolf Willmann

FAO

A human rights-based approach in small-scale fisheries - a quest for development as freedom



My talk will commence with a brief account of how a human rights perspective entered the discourse in FAO's Committee on Fisheries and into the wider fisheries debate. It will trace the origins of the discourse to a series of civil society meetings addressing rights issues in small-scale fisheries including rights to fish and other natural resources as well as livelihoods and cultural rights. The broadening of the rights discourse in fisheries from a historical focus on fishing rights to a human rights based approach is embedded in a new soft law instrument, i.e. the international guidelines on securing sustainable small-scale fisheries which are currently being negotiated within the framework of the FAO COFI. Drawing on experiences with applying human rights-based approaches in various areas and sectors, my talk will examine the opportunities, challenges and principal strategies in implementing this instrument.

Moenieba Isaacs

University of Western Cape, South-Africa



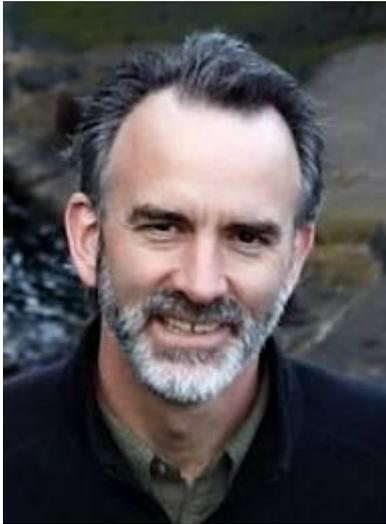
Small-scale fisheries governance and the limitations of expanding access using individual fishing quotas – the case of South African fishing sector.

Post-apartheid fisheries reform in South Africa, through the Marine Living Resources Act 18 of 1998, used ITQs to broaden resource access through allocating quotas to new entrants, even though the system has been created to reduce capacity through a reduction in the number of active fishers. The formal action space created through fisheries reform in South Africa left many artisanal fishers to operate in the informal action spaces. In order to obtain quotas under these new conditions, fisher organizations (welfare-based, unions and cooperatives) that emerged from the anti-apartheid movement were pressured to entrepreneurialize. This resulted in the community elite restructuring community organizations to capture access rights and many poor and marginalized fishers losing out of the formal rights allocation process. Fisher organizations Artisanal Fisher Association, Masifundise and academics launched a class action case against the system of individual transferable quotas as applied in South Africa. The out-of-court settlement involved the development of a national small-scale fisheries policy that requires community organizations, private companies and cooperatives to focus on co-managing small-scale fisheries with the state, as well as on the development of the sector, in order to secure resource access.

This case study of South Africa highlights the limitations of expanding access through ITQs, the failures of existing policy frameworks and the implications for the implementation of the new small-scale fisheries policy in South Africa.

Kevin St. Martin

Department of Geography, Rutgers University

*Marine Spatial Planning and the Fate of Communities*

Marine Spatial Planning (MSP) is an emerging process that seeks to address current and unprecedented concern with the status and governance of the marine commons. Having taken hold internationally, this program has come to the forefront of U.S. ocean policy and will have wide-ranging effects on marine resources and resource users alike. This paper explores the potential prospects and problems associated with this process for the people and resources to be governed by it. It documents and locates “communities” and “the environment” as key actors within the emerging regime of MSP, and it traces their position and movement through a rapidly forming network of federal and state agencies, off-shore energy and fisheries interests, marine conservation and wildlife organizations. In addition, the paper documents how each is inscribed into new data collection technologies, digital mappings and visualizations, and methodologies for data integration that are MSP’s technical foundation. While there are many pronouncements suggesting a priority for community and environmental sustainability within MSP discourse, this paper examines the recent history as well as the actual technologies and metrics of MSP in the U.S. which will constitute the future of coastal community and environmental wellbeing.

Parallel Sessions and Paper Abstracts

Panel sessions

Series 1

Wednesday, 26th of June

2.00-4.00 p.m.

1.1. Roundtable “Governability of Fisheries and Aquaculture: Theory and Applications”

Chair: Ratana Chuenpagdee

Based on the ‘Interactive Governance’ theory, the second book volume after “Fish for Life” (Kooiman et al., 2005), entitled “Governability of Fisheries and Aquaculture: Theory and Applications” takes the theory to another level, where concerns and challenges in fisheries are elaborated in the context of governability, and where case studies illustrate various aspects of the governability assessment framework. In this special session, we begin with a brief presentation about the interactive governance and the concept of governability. Then we ask the authors of volume two to present their take on how to look at the four main concerns in fisheries and aquaculture, i.e., social justice, livelihoods, food security, ecosystem health and gender, in the context of governability. This will be followed by general discussion about the applicability of the framework in addressing specific concerns that the audience faces. The objective of the session is to discuss interactive governance theory, concept and analytical tools and their usability in addressing key concerns in fisheries and governance, as well as to explore the relevance of the framework in practice.

Presentations:

Jan Kooiman, University of Amsterdam, The Netherlands

Svein Jentoft, University of Tromso, Norway

Maarten Bavinck, University of Amsterdam, The Netherlands

Ratana Chuenpagdee, Memorial University, Canada

David Symes, University of Hull, Great Britain

1.2.Trade

Chair: Prateep Nayak

The good, the bad and the ugly of seafood trade: unraveling the effects of global seafood trade on local fisheries systems

Eny Buchary, *Beatrice Crona* and Tim Daw

Stockholm Resilience Centre, Stockholm University, Sweden

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Globalization of the seafood trade is a fact. Over 40% of marine fish landings enter international markets, and yet about 50% of fish for human consumption still comes from small-scale fisheries. These small-scale fisheries support the livelihoods of approximately 8% of the world's population. International markets increasingly drive local fisheries with imprints on both marine and social systems. Therefore, governance at local levels can no longer be pursued in isolation. Based on meta-analysis of local fisheries around the world, we develop a typology of pathways by which small-scale fisheries are affected by global trade in order to elucidate factors that likely determine the outcomes of fishery-global trade interactions. This represents the first step in developing a diagnostic framework to identify how trade affects local social-ecological systems under different circumstances, with the ultimate goal of informing improved governance for sustainable seafood trade.

Fish is the missing ingredient in food security and nutrition initiatives

Denis Hellebrandt, Edward Allison and Anne Delaporte

University of East Anglia, School of International Development

d.hellebrandt@uea.ac.uk

We carried out a systematic review of evidence of the impacts of fish consumption on the health of poor people in developing countries. Our findings indicate that fish is unique among other food sources, with a range of proven health benefits that can have a long-lasting impact across poor and vulnerable populations. Nevertheless, we also found that fish is missing from mainstream action to reduce micronutrient deficiencies. Evidence suggests that fish also offers a solid foundation for food-based strategies in small-scale fisheries settings due to production at household level. The role and importance of fish in food-based strategies that build on people's existing production and culinary systems needs to be promoted if it is to contribute to addressing food and nutritional security. However, proof-of-concept demonstrations are still required: work is ongoing in some regions, e.g. South and Southeast Asia, but the approach is needed in other developing countries where fish is an important component of traditional food systems.

“Better have no rice rather than have no mobile connection”: Impacts of mobile phones utilisation in small pelagic fish marketing in Waworada Bay-West Nusa Tenggara

Laksmi Rachmawati

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Mobile phones utilisation already proved have positive impacts to trading by reducing transportation and transaction cost (Overa, 2006). In Waworada Bay, the market mechanism demonstrates similar situation. Mobile phones connect fishermen and traders in all levels and lead to increase efficiency in the small pelagic fish marketing. The efficiency comes not only from the decrease of transportation cost but also the decrease of loss from production decay and price margin. The local traders can directly contact the fishermen in the fishing ground and send small boats to pick up the catch which guarantee the freshness of production. However, the more transparent market not only provide price informations, but also offer other important informations such as area which have abundance production in particular time. Then, this information influence the fishermen’s decision relate to fishing ground. By this more “pro active” marketing mechanism, the traders which mostly dominated by women already depend on the mobile phones. In exploring some cases to highlight the above issues, I use qualitative data that was collected through in-depth interviews to some small pelagic fish traders in Waworada Bay.

1.3. Participatory Fisheries Research and the Science to Policy Nexus

Chair: Rob Stephenson

Different perceptions on the meaning of discards and the effect on self-sampling programs in Dutch fisheries

Marloes Kraan

The Dutch case study in GAP2 focusses on discard self-sampling programs. Fishermen and scientists cooperate in different ways to improve knowledge on discards in Dutch demersal fisheries. Fishermen are involved in sampling their catches and by cooperating in this activity they improve the spatial-temporal information on discards. This cooperation takes place in a context of policy development in which a ban on discarding has been proposed. A definition of what discards are can easily be agreed upon but perceptions on the meaning of discards

and their role in the natural and social system can be very different. The paper will discuss these perceptions, analyze the discourses and discuss the importance of differing perceptions on discards for the cooperation in self-sampling programs.

Addressing information needs of evolving fisheries policy and management

Stacey Paul and Rob Stephenson

The information needs of management are changing. Evolving 'ecosystem-based' and 'integrated' management approaches require more and different information. This is demonstrated, for example, in the attempt to develop an integrated management plan for the SW New Brunswick (Bay of Fundy) area through the SWNB Marine Resource Planning Initiative which identified the need for information on a series of 'community values'. Our project within the Canadian Fisheries Research Network is studying the data needs and requirements to meet Canada's current and emerging policies related to fisheries management. A scan of the current information use in science and management is being compared with anticipated future needs to identify critical areas of information need, best practices (and capacity shortfall) in addressing those needs.

Making and using Long Term Management Plans (LTMPs): What's different when stakeholders are involved?

Martin Pastoors, *Steve Mackinson* et al.

GAP2 is a Europe-wide project, bringing together fishermen and researchers from across the continent to help inform and shape policy. Could meaningful stakeholder engagement help to develop solutions for sustainable fisheries and fishing communities? Several GAP2 cases studies focus on the development of long term management plans (LTMP) e.g. for the Western Baltic herring fisheries, North Sea mixed fisheries and North-western Mediterranean deep-sea red shrimp fisheries. This paper addresses the question: what is different when stakeholders are involved in the development of management plans? The first challenge is to create a common understanding of what the essential elements are that constitute a management plan. A first survey showed that the discourse on long term management plans focused on relatively high-level abstract properties like 'sustainable fisheries' and 'transparency of management decisions'. Much less attention is devoted to the mechanisms that are embedded in the management plans. We demonstrate how different perceptions of management plans could both allow and constrain their future use in policy-making.

Indicators in Fisheries Management: Barriers or Bridges to Sustainability?

Melanie Wiber and *Courtenay Parlee*

The authors of this paper are currently working with industry, government researchers and managers in a multi-disciplinary project to improve both ecological and social outcomes of the Canadian fishery. This performance based indicator approach has been referred to in the literature as a 'technology of governance' which exercises different kinds of power (in sensu Miller and Rose 1992). Theoretically, the indicator approach as a technology of governance is supposed to improve accountability, transparency and rationality (Shore 2008; Davis, Kingsbury and Merry 2012). The governance literature suggests however, that in practice indicators increase command and control management without necessarily improving performance, especially with regard to social outcomes. The assembly of indicators is often a collective process. The disseminators of indicators usually depend on large networks of independent actors such as our multi-disciplinary team for data collection and analysis (see Davis, Kingsbury and Merry 2012). As a result, the promulgators may or may not be the same actors involved in developing the content of indicators but both wield significant power over 'beneficiaries' or the 'targeted population' (Rose 1992; Dean 2010). In our case study, the intended beneficiaries include the fishing industry and government. This blurring between the governed and the governors is an example of what Davis, Kingsbury and Merry (2012:13) predicted would be a complication in the models of governance that are premised on clear divisions between governors, governed and others. This blurring of distinctions raises questions about the nature of the relationship between beneficiaries and managers that arise as a result of indicators and about who is in control. Using our multi-disciplinary project as a case study, this research paper explores the complex and variegated power relations that emerge with the development and implementation of a performance based indicator approach to improve ecological and social outcomes of the Canadian fishery. Following Foucault (1991), Dean (1996;1999) and Rose (1999), the questions that emerge from the "technology of power" approach that we will address include: Who decides on appropriate standards of performance? Who decides on appropriate proxy measures for desired outcomes? Can only quantifiable measures be used? Qualitative data integrated how? What is the cost of an indicators system and who should bear this cost? What are the unintended outcomes of "audit culture" approaches?

Collecting Traditional Ecological Knowledge as a new way of fisheries governance in Galicia, Spain

Duarte Vidal and *Pablo Pita*

In early 1990, the Galician regional government initiated a new fisheries management system for some sedentary invertebrates species using Territorial User Rights to Fisheries (TURF). Each fisheries organization (cofradía) attained a degree of autonomy for decision-making, regulation, control and management of the resources. The other resources are still managed by the government of Galicia using a conventional, top-down, approach. Following the success of this new co-management system, Galicia fishers started to discuss the possibility to expand this system to other fisheries that were under the conventional top-down model. One of the initiatives that the fishers of Galicia promoted was the establishment of marine reserves. However, scientific information and statistical databases were restricted and in some cases non-existent. Within the GAP2 project, we aimed to develop alternative and complementary information sources that were needed to monitor and assess fisheries. The integration of traditional fisher knowledge with the available scientific knowledge provided an opportunity to improve the spatial information about the ecosystem and about the fisheries. The paper will conclude on the main lessons from this participatory approach.

Perspectives on collaborative research for lobster in Atlantic Canada

Rémy Rochette, *Rob Stephenson*

The lobster fishery is the most important in Canada in terms of landed resource value, and large number of participants. Canadian Fisheries Research Network has linked academics, industry and government in an ambitious collaborative sampling program aimed at key uncertainties in population structure, connectivity and recruitment dynamics. This paper will present an overview of the project, and present the perspectives of industry, academia and government to this participatory research and its potential impact on management.

A comparison of lessons from GAP2 and CFRN on participatory research efforts and the links to policy development.

Rob Stephenson, Martin Pastoors, Stacey Paul, Steve Mackinson et al.

The NSERC Canadian Fisheries Research Network (CFRN) is a collaboration of academic researchers, the fishing industry, and government researchers and managers from across Canada. The Network includes over 30 academics from 15 universities working closely with representatives of fishing fleets from Canada's

Atlantic, Pacific and freshwater fisheries, and Fisheries and Oceans Canada (DFO). The GAP2 network is a similar collaboration of researchers, fishers, NGOs and policy makers in 12 European countries. An exchange program between the two networks has been carried out in April 2013 to compare main findings from the participatory research networks. Results will be reported on the three key challenges: (1) addressing information gaps for commercial fisheries by improving the use of industry information in assessment and management; (2) enhancing ecological sustainability while achieving operational efficiency; and (3) improving the basis for the ecosystem approach to fisheries management. The information needs of management are changing. Evolving 'Ecosystem' and 'Integrated' Management approaches, which include ecological, economic, social and institutional considerations, require more and different information. Much of this new information will have to come from the fishing industry. We conclude that while the techniques and procedures for participatory fisheries research seem to be well advanced in Canada and Europe, only few examples demonstrate an effective link between the participatory research and the ecosystem approach on the one hand and decision-making on the other hand.

1.4. Small-scale Fisheries

Chair: José Pascual

SPECIAL SESSION(S) AND ROUND TABLE ON SMALL SCALE FISHERIES, WITH EUROPEAN FOCUS

Organizers: J. Pascual (Universidad de La Laguna), M. Bavinck (University of Amsterdam), S. Jentoft (U. of Tromso), K. Frangoudes (U. of Bretagne Occidentale), R. Chuenpagdee (Memorial University)

AIMS AND SCOPE

Artisanal or small-scale fisheries (SSF) involves 90% of all the fishers globally. In the world, 54.8 million people live directly from fisheries and aquaculture, and between 660 and 820 millions of people depend, one way or another, from these activities (FAO, 2012: *The state of world fisheries and aquaculture*). Research globally in SSF is the subject of the project TBTI (*Too Big To Ignore: Global Partnership for Small-Scale Fisheries Research*) and as a consequence we are focusing our interest in the small-scale fishing people of different areas of the world, underlining their relevance.

In Europe artisanal boats comprise an estimate of 87% of the fleet and more than half of the employment. Small-scale fisheries and aquaculture in Europe confront challenges of very different scope, being this sector more diverse than

usually stated. Some of the challenges may arise from the competition for resources with activities, like recreational fisheries, that may target similar species and fishing areas. Also, urban development and tourism may affect many of the activities developed along the coast, in beaches or harbor areas. The competition with larger fleets for resources and markets cannot be underestimated either. The recent European Commission proposal on the reform of the Common Fisheries Policy (CFP) explicitly states that fish stocks are overfished and the status of the European fishing industry is precarious. It places ITQs in the public debate by posing as a solution "a gradual introduction of transferable fishing concessions" (TFCs) that will act to adjust fleet and fishing effort to available resources. At the same time, it establishes the possibility to avoid the application of these measures to the artisanal fleet (defined as vessels under 12 meters with passive gear). However, the reform proposal by the Commission, aimed at the management of industrial fisheries, does not provide clear safeguards for small-scale fishing communities. The response of the European Parliament to this proposal has changed the definition of SSF, compromised the deployment of TFCs, and emphasized that SSF indeed exists in the European context.

The proposal of using TFCs as the main instrument for managing fishing rights in Europe, if implemented, may compromise customary access rights of SSF, constituting a menace for its viability. In some areas of Europe this activity is already menaced or in crisis, while in other places the activity remains strong. Some diversification strategies may offer opportunities to be considered in specific cases, like seaweed harvesting or fishing tourism, but these alternatives are far from universal. In this panel we want to emphasize the challenges already faced by artisanal fisheries in Europe and those introduced by the CFP.

Panel session

The panel session includes six paper presentations and a panel discussion. The papers cover a broad range of aspects regarding small-scale fisheries and aquaculture in Europe, with a special focus on governance, from the theory to practice. The panel discussion is an opportunity for the panelists to present their point of view about the current changes in this area and for interactive discussion with the participants.

Governability of Kelp forests harvesting in Iroise Sea, France.

Katia Frangouides

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Kelp forests have a higher productivity than most agricultural systems and due to their size and great vertical extent in the water column they provide food and habitat for many animals. Due to this, kelp forests are extremely important for fisheries dynamics. At the same time kelp are used by humans either for animal feed or for

human food additives. In Brittany, kelp are exploited since several centuries first by foot gathers and then by small scale boats practicing also other fishing activities mainly shellfish fishing. The use of this rich ecosystem call for the implementation of rules to manage harvesting activity to avoid overexploitation of the stocks. The objective of this presentation is to examine the governance system of kelp harvesting by presenting the current institutional system and the interactions between institutions and stakeholders (fishers, scientists, and processing industry) from which the sustainability of kelp forest depends.

Interactive governance for sustainable small scale fisheries: creating synergies with marine conservation and tourism

Jose J. Pascual-Fernández, Raquel de la Cruz Modino, Ratana Chuenpagdee, and Svein Jentoft

Univ. de La Laguna, Tenerife, Spain
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In most coastal countries in Europe, small-scale fisheries make up the majority of the fishing fleets. They are a major contributor to income and employment in local communities, and to food security. Although they have received relatively little attention to date, the new Common Fisheries Policy will influence on their wellbeing. Likewise, the implementation of the new FAO guidelines for securing sustainable small-scale fisheries will also impact on them. Additionally, small-scale fisheries do not exist in isolation but are heavily influenced by other activities that occur within the coastal areas, for instance by marine tourism, that compete for the same space and resources. All these activities are subject to increasingly strict conservation regimes within the European Union. The relationship between small-scale fisheries, tourism and nature conservation, however, does not need to be antagonistic given certain interventions. Such observation is exemplified in the fishing community La Restinga (El Hierro, Canary Islands, Spain), where actions have taken place to build community resilience, even under extreme natural hazards, which provide lessons for others. Drawing from interactive governance theory we submit that antagonism can be turned into synergies through governance mechanisms that build relationships and foster cooperation between stakeholders in the community.

Small-scale fisheries in Greenland: The Case of Greenland Halibut

Alyne E. Delaney

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This paper presents empirical research undertaken to understand the social and cultural importance of the Greenland Halibut (*Reinhardtius hippoglossoides*) fishery to Greenlanders at a time when the Greenland Self-Rule was in the process of making a new Greenland Halibut management plan which included the introduction of new transferable fishing concessions (TFCs). Fishing Greenland halibut is extremely important for its role in the local, mixed economy, providing vital cash for work and daily living and for meeting social obligations (e.g. through *kødgaver*, gifting of meat). With the new management plan, new entrants are banned and the TFC system is now favoring larger boats over traditional dinghies.

The paper suggests that management should follow accepted practices of good governance as it introduces its new Greenland halibut plan and also reflects on what “social sustainability” means in Greenlandic and fisheries contexts, contexts which are highly politicized as the country pushes for new industries.

Contribution of Small-Scale Fisheries to Employment in EU Fisheries Dependent Communities

Fabrizio Natale, Natacha Carvalho, Michael Harrop, Jordi Guillen, Katia Frangoudes
European Commission, Institute for the Protection and Security of the Citizen. Italy
fabrizio.natale@jrc.ec.europa.eu

There is a lot of uncertainty on the importance of small-scale fisheries and the employment they generate on local communities dependent on fisheries. Even if the importance of small-scale fisheries and fisheries dependent communities is constantly emphasized in the EU’s Common Fishery Policy, they often receive too little attention. This presentation examines direct employment generate by small-scale fisheries in the EU, at both, aggregated level and for fisheries dependent communities. Results show that small-scale fisheries are responsible for 44% of the total EU fisheries employment. Small-scale fleets generate more than 35% of the employment in fisheries dependent areas (where more than 5% of direct employment comes from fisheries). However, its importance varies enormously by community.

Round table

The participants in the round table will present and discuss various positions on the medium-term future of SSF. The broad, lead question is: What are the conditions

under which SSF can maintain or even improve its position in Europe, and how can these be achieved?

1.5. Hurricanes and Tsunamis

Chair: Rodrigo Medeiros (requested)

Tsunami and Opportunistic Fishermen

Subramanian Balaraman

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Tamil Nadu is one of the coastal states in India bordering the Bay of Bengal in the east. The 2004 Indian Ocean Tsunami brought about many changes in the fishing community with respect to fishing and social life. Even though the Tsunami caused heavy damages to homes, fishing properties, and human lives, the same became a turning point in fisher's socio economic life. The affected fishers recovered from those shocks very quickly and became opportunistic to make use of the post tsunami scenario by improving their fishing practices and social life. Without any external influences in their decision making, they made use of the benefits from NGOs and government into expanding their fishing efforts and fishing areas without any major fishing conflicts and at the same time keeping the traditional home land under their control.

Livelihoods Reexamined: A Critical Look at Gender Roles in the Aftermath of the 2004 Indian Ocean Tsunami

Julia M. Novak

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In Indian fishing communities, there is very clear delineation of duties. Men generally fish while women are responsible for many of the allied fishing activities, such as vending, drying or salting. For this reason, the tsunami and subsequent relief affected these gendered professions differently. This paper examines the effects of the tsunami and relief effort on the different gendered divisions of labor within fishing communities and investigates how people have coped with changes to their traditional livelihoods, through a gendered lens. This chapter uses primary and secondary literature as well as observational data collected during field research conducted in August 2012. I find that the tsunami did affect the gendered

occupations differently, causing negative and positive shifts to occur in different instances. While some communities have been able to adapt to these shifts, others have not. This paper calls for further research on the long-term livelihood impacts of the tsunami.

A typology of strategies to build resilience to hurricane impacts on seaports: Findings from case studies of Providence (RI) and Gulfport (MS)

Austin Becker and *Meg Caldwell*

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We conducted case studies in two highly vulnerable seaport communities (Providence and Gulfport, U.S.) in order to identify consequences of storm events on port stakeholders, as well as strategies to build resilience in the face of climate change. We interviewed stakeholders in the port systems and analyzed planning and policy documents relevant to port and storm impacts/resilience. We found key differences in perceptions of consequences and strategies between Gulfport, a port that was destroyed recently in Hurricane Katrina, and Providence, a port that has not had a significant storm in 60 years. We conclude that many stakeholders in the port networks can play a role in building port resilience and that port resilience functions as and should be treated as a public good from which many stakeholders outside the port authorities benefit.

Weathered Storms and Following Seas: Fisheries in the Wake of Hurricane Sandy

Angela Oberg, *Julia Flagg*, *Ariele Baker*, *Bonnie McCay*, *Patricia Clay*, *Lisa Colburn*
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The line between natural and man-made disasters is often blurry. These conceptual distinctions are closely related to how responsibilities for renovation are distributed. This paper presents preliminary results of research on the socio-economic and cultural effects of and responses to Hurricane Sandy, the “superstorm” that made landfall in the US Mid-Atlantic region October 28-30, 2012. Ethnographic interviews are being conducted to document the broad context of vulnerability and resilience of commercial and for-hire recreational fishermen and associated businesses, their families, and communities in New Jersey, one of the states hardest hit by the storm.

This includes resilience and vulnerability to socio-economic changes in the industry and area, as well as to climate change. These interviews capture perceptions of Hurricane Sandy within the larger context of climate change and how those perceptions shape envisioned futures of fishing communities in New Jersey. Our research deepens understanding of the relationships between vulnerability and resilience as well as provides information on the broader economic, social and cultural effects on fishing families, economies and communities.

Panel sessions**Series 2****Wednesday, 26th of June
4.30-6.30 p.m.**

2.1. Governance general

Chair: Jan van Tatenhove

Strong societies, soft states: contours of a South Asian model for fisheries governance

V. Vivekanandan and Maarten Bavinck
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To what extent are management models developed for the West appropriate to the fisheries of South Asia? After all, there are substantial differences in ecosystems, societal conditions, and governance arrangements between these geographical regions. As John Kurien argued already in 2001, 'tropical majority fisheries' at least partially require other approaches. This paper, based on long histories of involvement with the fisheries sector in South Asia, strives to define the contours of a new perspective. Interactive governance, legal pluralism, co-management, and adaptive management literature provides relevant building blocks.

We have four starting points, or assumptions. 1) South Asia is characterized by a multi-species, multi-gear fisheries,, exercised by large populations of fishers distributed over long coastlines.2) Macro-economic development processes are unlikely to create alternative livelihoods for these populations in the medium-term; consequently, management should prioritize the maintenance of livelihoods, largely in the small-scale sector, recognizing that small scale fisheries are most sustainable from ecological, social and economic points of view. 3) South Asia has strong traditions of user management, and structures for fisheries management set up by governments are relatively recent and weak; the prevalence of legal pluralism poses important challenges to governance, which necessitate 'bridging' and 'negotiation'. 4) The manifold changes occurring in the climate regime, socio-economic realms, coastal regions, and other societal fields requires an approach that is both flexible and adaptive.

Future of Reefs in a Changing Environment (FORCE): a multi-layer adaptive governance framework for Caribbean coral reefs

Selina Stead, Clare Fitzsimmons, Johanna Forster, Rachel Turner, Angelie Peterson, Robin Mahon

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By using a multi-scale (individual, sector, community, national and regional) governance perspective, this paper examines development of a framework to help decision-makers visualise complex links between horizontal and vertical components of integrated coastal management in the Caribbean. Face-to-face semi-structured interviews (869 marine resource users; 61 national and 56 local key informants) were completed in 12 communities in 4 Caribbean countries (Barbados, Honduras, St Kitts and Nevis (SKN), Belize) between March 2011 and July 2012. Knowing who makes decisions and what evidence is used can give insights to governance constraints. Results from policy cycle exercises will be shared: in Barbados, stakeholder involvement was highest in the 'data and information' stage and decision-making highly centralised. In SKN, the 'implementation' and 'review and evaluation' stages were weak and duplication in externally funded projects a problem. The biggest weakness in Belize was a lack of review, evaluation and feedback of information resulting in an incomplete policy cycle. In Honduras, many stakeholders generated information but there was limited review, evaluation and formulation of advice to decision-makers.

Global and local dynamics in the development of marine infrastructure: Falmouth Cruise Terminal, Jamaica

Dorien Korbee

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The construction of marine infrastructure has ecological and social implications on a local scale. However, requirements of the project design and implementation are often predominantly set by international rules and regulations. This raises questions as to how innovative approaches to marine infrastructure development are being deliberated and implemented. In this paper we analyse the development of the Falmouth cruise terminal in Jamaica. The construction of this cruise terminal alters the Jamaican coastline and has severe consequences for both population and ecology. However, the urge to build this cruise terminal is linked to dynamics in the international cruise tourism industry. Furthermore, the necessary coral relocation is framed as being a 'Building with Nature' solution; an innovative approach in coastal engineering. By analysing how the project arrangement is connected to global flows

through 'connecting mechanisms', we give insight in how global and local dynamics influence the planning and design of this project, and how this results in the adoption or rejection of innovative approaches.

Who governs? The role of local authorities, public agencies and the Sami Parliament in coastal zone planning in Norway.

Ann-Magnhild Solås

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In Norway, spatial planning of the near shore coastal waters is a task delegated to the local municipal authorities. However, other public agencies, like the Norwegian Food Safety Authority and the Directorate of Fisheries, do have their say in matters that relate to their sectoral interests. In addition, a quite recent change in the Planning and Building Act gave the Norwegian Sami Parliament the right – and duty – to intervene on municipal plans concerning matters of special significance to Sami culture or commerce. Taking as a point of departure the question of whether or not to allow a new fish farm at a particular site in Northern Norway, this paper discusses the roles of the different public authorities when it comes to coastal zone governance. What happens when interests collide? Who decides what matters and whose knowledge counts? What about the public? These questions all lead up to the central issue of who governs.

2.2. Is there added value in a social wellbeing approach to fisheries governance? Some evidence from the Wellfish Project

Chair: Derek Johnson

Panel organizer: Dr. Sarah Coulthard, WellFish project, Northumbria University UK

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What's the added value of a social wellbeing approach to fisheries governance? - some propositions...

Coulthard, S. L. Sandaruwan. N. Paranamana, O. Amarasinghe, O., and D. Koralgama.

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This paper introduces a 3-dimensional framework for exploring social wellbeing which combines objective, relational (social) and subjective dimensions – arguing

that all three are necessary for a fully rounded notion of wellbeing. The paper first describes how this 3D framework was operationalized to empirically research wellbeing in fishing communities in Sri Lanka and India as part of a 3-year ESRC funded research project 'WellFish'. We detail some of the key findings and insights from across the study areas and propose that a social wellbeing framework can contribute to fisheries governance in three ways. First, its focus on objective human needs gives fisheries governors a useful minimum standard against which to measure the social impacts of change in fisheries. Second, wellbeing gives critical insight into the social nature of fisheries and the complex web of relationships that fishers are surrounded by, which influence both life satisfaction and fisher behaviour. Finally, a focus on subjective wellbeing compliments and adds to existing approaches that seek to understand fisheries as a culturally valued way of life. Connecting all 3 dimensions of wellbeing gives a powerful holistic methodology with which to study fisheries, which helps to bridge social science domains of maritime research.

Why the 'social' is so critical to fisher wellbeing - relating social relationships and wellbeing in a Sri Lankan fishery

L. Sandaruwan, S. Coulthard and O. Amarasinghe
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This paper presents an innovative methodology that explores the range of social relationships which have influence over fishing behaviour and the degree of wellbeing that fishermen are able to achieve. 40 Interviews were carried out with fishermen from Rekewa lagoon, Sri Lanka, in which fishermen were asked to identify important relationships in their lives as fishers, explain why they are important, and to score the degree to which they are satisfied with each relationship. Our results show that fishers have a myriad of different relationships which span beneficial, dependent, and exploitative typologies – some are positive and contribute to wellbeing, others can be exploitative and harmful. Critically, our findings illuminate how relationships can both add to and detract from wellbeing, and how this is swayed by various factors, including household resources and social position. We discuss the role of crew, fish traders, other fishers, and family members who collectively shape a fishermen's wellbeing and argue that greater attention needs to be given to relational factors to understand fisher behaviour and the realities in which they operate.

Women's wellbeing in fisheries and the problem of alcoholism

N. Paranamana and S. Coulthard and O. Amarasinghe
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This paper addresses the often overlooked, but significant, problem of alcohol and drug abuse in fishing communities and its impact on women's wellbeing and social wellbeing more generally. We start with a global overview of the prevalence of alcohol and drug abuse in fishing communities around the world and discuss alcohol's historical and cultural relevance to fisheries, and some of the known implications for men and women operating within the fishery. We then present interview and questionnaire data from women living in a Sri Lankan fishing community, which document the impact of alcohol abuse on women's lives. Our findings show that, in some cases, alcohol abuse disables women in meeting even their basic human needs. We explore the strategies that women are currently adopting to try to cope with the problem of alcoholism in their society, and consider the type of interventions that may help lessen the problem. Such support, we argue, could form an innovative part of existing fisheries and conservation management in the region.

The effect of fishermen's behaviour and wellbeing on the ornamental fishery and the associated nearshore coral reefs in southern Sri Lanka.

James Howard

The relationships between coral reef degradation and the livelihood activities of reef dependent communities such as those of ornamental fishermen of southern Sri Lanka remain unclear, especially given the tendency for research to focus on biodiversity conservation. Lack of knowledge concerning these complex relationships contributes to both the deterioration of coral reef productivity and the benefits that reef dependent communities can accrue from coastal livelihoods and from the ornamental fish trade in particular. Individual fishermen's wellbeing, fishing strategies, skill and levels of damage are presented and their damage impact is compared to other causes of damage to Sri Lankan reefs. Interwoven with these quantifiable results are the corresponding qualitative results, taken from collaborative, extensive participant observation, interviews and focus groups with all actors in the fishery. These data expose the underlying complexity in fishermen's decision making, wellbeing and behaviours which are major drivers affecting resilience in this social-ecological system. This multi-faceted approach to understand the social and ecological linkages of the ornamental fishery, allows a more accurate identification of sectors of the system where management initiatives would be most effective.

Panel discussion – Does a wellbeing perspective add value to current perspectives?

2.3. Methods

Chair: Marloes Kraan

Communicating EAF for implementation: The experience of two projects in the South African small pelagic fishery.

Emily McGregor, S. Ragaller and D.C. Wilson

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Effective communication among stakeholders is essential for implementing an ecosystem approach to fisheries (EAF). Focus groups identified barriers to communicating the results of a knowledge-based tool evaluating the efficacy of EAF implementation in the South African sardine fishery to stakeholders. A structured modelling approach was useful in guiding discussion around the objectives of EAF. We found that there are mismatches in the objectives for EAF among stakeholders, making it difficult to communicate scientific knowledge for EAF implementation. On the ground, the experience of plurality of fishers gives rise to yet another perspective of management objectives which in turn hampers improvement in the communication between west coast fishers and the management agency. While progress has been slow in implementing EAF, advancements have been made in understanding the complexity of the issue and nature of the barriers. Continued focus on communication and bridge-building between management and stakeholders is essential.

Ecosystem based management – three context-specific dimensions of interaction between stakeholders

Christine Röckmann, Judith van Leeuwen, David Goldsborough, Marloes Kraan, Gerjan Piet

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Expectations about “ecosystem based management” (EBM) differ due to diverging disciplinary perspectives about what EBM should be and how it should work. This diversity of perspectives, values, stakes, and the specificity of each individual situation requires trade-offs to be made between ecological, economic and social sustainability criteria. The authors argue that successful EBM needs more emphasis on interactions between the different stakeholders (scientists, decision makers, practitioners) to create transparent, legitimate, credible and salient EBM processes.

Three dimensions of stakeholder interactions are considered crucial: (1) stakeholder participation at the interface between decision makers and practitioners, (2) collaboration and joint knowledge production at the interface between scientists and practitioners, and (3) uptake of scientific policy advice at the interface between scientists and decision makers. Finding the optimal degree of interaction for these dimensions depends on the specific location, EBM setting and context.

“The best scientific knowledge” as a basis for fisheries management advice – a straightforward thing?

Astrid Jarre, L. Hutchings, G. Duggan, A. Cockcroft, R.E. Ommer
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The implementation of system-based fisheries management in the Benguela requires advice based on “best available scientific knowledge”. The historic approach of sector-specific, largely top-down management has seemingly left the South African fisheries system in a Gordian knot. Recent research in an interdisciplinary group including anthropology, history, sociology, mathematics, oceanography and biology seeks to identify methodology for soft predictability and structured decision making in social ecological marine systems under global change. Using four case studies from the small pelagic, west coast rock lobster and kob handline fisheries, which span the scales from very high to low capitalisation and offshore to inshore, we explore how semi-qualitative methodology, collaborative data collection and mediated system modelling approaches can enhance communication, support the softening of boundaries between stereotyped stakeholders, and generate a shared knowledge base. We discuss progress achieved and obstacles encountered with the aim of generating further discussion and deepening insights.

Learning about social-ecological trade-offs through participatory modeling

Diego Galafassi, Tim Daw, Sarah Coulthard, Caroline Abunge, Katrina Brown
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In this paper we ask, what is the effect of participatory modeling in learning about the nature of trade-offs that emerge as a result of social-ecological change? We designed a participatory modeling process to elicit, communicate and instigate learning about trade-offs in wellbeing of different people in coastal Kenya. We evaluated the impact of these activities by workshop entry and exit questionnaires and a follow up interviews to explore different aspects of learning. Participants discussed their engagement with the different tools, what they learned and about the

impact on their perceptions and way of thinking about coastal issues. Participating secondary stakeholders learned about the nature of trade-offs by improving holistic thinking and learning about new linkages in the social-ecological system. Primary stakeholders developed greater understanding of their interdependence and commitment to establish a multi-stakeholder beach management unit to address the challenges.

2.4. Artisanal Fisheries Navigating between Tradition and Modernity

Chair: Cornelia E Nauen

This panel explores the coping strategies of artisanal fisheries in different parts of the world as they try to retain some of their traditions and social control over economic actors with their role in a globalised market of fisheries products, but also the increasing competition for access to coastal space with tourism and other developments. Two countries/regions will be discussed in a comparative manner to teeth out local specifics from global trends which could inform policy: Senegal in West Africa and the Philippines in Southeast Asia. Underlying the exploration will be results from a quantitative reconstruction of catches of the small scale fisheries in both countries as part of the global effort of the Sea Around Us Project, which are a contribution to rectifying widespread misled perceptions of the marginality of 'traditional' or artisanal fisheries. This will be enriched by video footage on the what the key actors themselves have to say and qualitative analysis of the strategies deployed by artisanal fisheries to maintain or regain control over their ability to shape alternative futures to industrial and other externally defined development models, largely based on *Mundus maris* field work.

Artisanal fisheries navigating between tradition and modernity: A short history of subsistence gleaning in Mabini, Batangas, Philippines

M.L.D. Palomares, J.C. Espedido, V.A. Parducho, M.P. Saniano, L.P. Urriquia, P.M.S. Yap

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Catch by gleaning forms a major part of subsistence and municipal fisheries especially in developing countries, but such landings are unreported. In this contribution, we attempted to construct a historical overview of gleaning in 10 coastal barangays in Mabini, Batangas. Our interviews with 111 fishers, 10-84 years of age, indicate a general decreasing trend over 8 decades in gleaned catch, from an

average of 2-2.5kg/gleaner/hour prior to the 1950s to 0.5kg in the 2000s. Furthermore, the distance that fishers needed to walk while gathering edible seafood has increased from about 0.5m to about 30m from the shoreline. That is, they would have gathered a sizeable amount of edible seafood in a 1m² area during the 1950s (possibly reaching 5kg per gleaner per hour), 20% of which would have been consumed by the family and 80% shared with neighbours or relatives. Now, they would need to walk as far as 30m from the shoreline to be lucky to get at least 500g of edible seafood, which would only be enough to feed one family at most for a couple of days. The catch by gleaning, notably in the 1950s and 1960s, did not contribute much to what was sold, rather, the sole purpose of gleaning then was for subsistence, either by the family or by the community as a whole. Gleaning has now been reduced to opportunistic gathering often for the purpose of selling (notably seashells), because there isn't much left to glean. Though still of fundamental value to a coastal community, gleaning evolved from being a survival resource to a luxury recreational activity in the last 60 years. We insert a caveat though that this story is not a general trend in most Philippine coastal areas where poverty among fisher communities reign.

The taste of Denial in Senegal, has driven fisheries to a dead end.

Dyhia Belhabib

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Senegalese fisheries are relatively abundant, and generate a high economic value for local communities. These fisheries are targeted by significant Distant Water Fleets and a dangerously increasing artisanal effort. Meanwhile, the impact of artisanal fisheries is as poorly known as the extent of illegal unreported and unregulated industrial fishing. One relies on official surveys, while the other was in the past constantly denied. Large and more frequent migrations of Senegalese artisanal fishers, the under-estimation of the effort and the increasing documented conflicts over fisheries suggest official increasing catch data do not reflect reality. A thorough literature review and experts and industry consultation were considered to reconstruct Senegalese fisheries data. Official national data were compared to the data supplied to FAO and adjusted from 1950 to 2010, reported and missing sectors were re-assessed, including artisanal catches within and outside Senegalese waters, non-commercial sectors, and industrial catches by the legal so-called domestic, foreign and illegal fleets. Results showed strong under-reporting by a factor of three. Artisanal catches were responsible for half of total extractions in the last 20 years compared to around 80% officially. Additionally, while catches by migrant fishers increased drastically, artisanal catches from Senegalese waters stagnated despite an increasing effort, suggesting strong over-capacity. Over a total of 34.9 million tonnes,

only 14 million tonnes were reported to the FAO, of which the IUUs alone were worth \$ 290 Million US, transhipped, hidden or discarded, resulting in strong economic loss. In Senegal fisheries exploitation beyond MSY resulted in a strong decline in catches despite a sharp increase in the fishing effort, driving artisanal fishers to increase their migrations, increase their costs and catch less fish.

Coping strategies of Senegalese artisanal fishers for retaining or regaining bargaining power when under assault from external interests for access to the resource and the coast

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This contribution explores the socio-anthropological perspectives of the deep crisis of small-scale fisheries in Senegal to complement the quantitative assessments by economist and biologists. Based on interviews with representatives of fish worker's trade union and/ or local association and qualitative field observations these past years, other tools for 'making sense' of the crisis have been developed so as to be more accessible to the social actors themselves. The crisis in the fisheries is not only manifest in terms of 'worsening of their socio economic conditions', because globalisation has impacted significantly on their bargaining power both with policy makers and economic actors that dictate the rules of the international and local markets. The paper discusses how these traditional fishing communities cope. This implies not only preserving or restoring 'an economically and environmentally viable' activity, but also a 'way of living'. Fishers, fishmongers and women fish processors are constantly adapting their strategies to this end. The brutal strains of globalisation have impacted women involved in fisheries selectively to the extent that we can talk nowadays about 'the feminisation of poverty in the small scale fisheries'. Their traditional roles of (often hidden) investors and managers in small-scale fisheries, are being undermined through the influx of external capital not subject to social control and a general trend to overcapitalisation. The relentless expansion of all segments in the fisheries has deeply degraded once productive marine ecosystems and disrupted respect for earlier restraint on resource extraction in traditional social settings. The author argues for addressing the crisis through more participatory and transsectoral approaches. These forms of governance should be based on strong democratic institutions with potential to exit the rush to the bottom. This should rescue what is best within traditional beliefs and practices and modernity. Suggestions are put forward for necessary transitions towards sustainable governance.

Discussion.

2.5. Vulnerability

Chair: Iris Monnereau

Climate change vulnerability and adaptation: purpose, scale and process

Edward Allison, Cecile Brugere, Cassandra de Young

Climate change vulnerability analysis is undertaken for multiple purposes – to conserve vulnerable places, to direct adaptation finance towards where it is most needed and to support people’s on-going adaptations to change. Methodologically, vulnerability analysis in the fisheries sector has evolved over the last decade from lists of potential ecological impacts and global maps of vulnerability indices towards providing more local-scale integrated social-ecological analysis informed by fishers and farmers’ own observations of change and adaptive responses. Vulnerability analysis also draws from theory and empirical experience from work on disaster risk management and poverty eradication. There is a growing emphasis on understanding the processes that lead to vulnerability, from political ecology analysis, and on the political economy analysis of climate adaptation and mitigation policy processes. We survey a rapidly evolving field and show how recent approaches better account for social differentiation to identify vulnerable people (and not just biophysical ‘hotspots’ and economically vulnerable places). Recent analysis also draws on institutional and governance analysis at multiple scales to inform future adaptation options. We also identify a nascent trend towards co-production of knowledge by scientists and fishing communities, to identify priority areas for adaptation action. Much of this research is conducted by NGOs and is unreported in the academic literature. Our purpose is to encourage a greater engagement by the maritime social science community in strengthening the social, political and cultural dimensions of coastal and marine climate change science, which is currently dominated by natural science and economic analysis.

Are Small-Island Developing States fisheries’ really that vulnerable to climate change? Iris Monnereau

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Small-Island Developing States (SIDS) are expected to be disproportionately affected by climate change due to their social, economic and geographical characteristics – such as limited size, proneness to natural hazards, low-lying areas, and low adaptive capacity. In recent years various vulnerability assessments of national fisheries to

potential climate change impacts have been carried out. These studies (see e.g. Allison et al., 2009 and Hughes et al., 2012), however, scarcely include SIDS despite the particular importance of fisheries in these countries. This study has replicated, with slightly modified methods, the 2009 vulnerability assessment by Allison et al. (2009) with most recent data and has broadened the analysis to include nearly all coastal states in the world including all, except one, Small-Island Developing States. This study assesses the outcome and relevance of this vulnerability assessment for SIDS and discusses a possible new framework integrating the advances in the field of national level vulnerability studies that have been made since the previous assessment.

Multiple Vulnerabilities and Coping Strategies of Fishers; Case of Post-War North and East of Sri Lanka

Gayathri Lokuge

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The proposed paper looks at vulnerability of fisher households from a multi-layered approach of man-made disaster; war, socio-political conflicts and resource depletion. Vulnerability at household level is analysed as the ability to face shocks and the availability and accessibility to coping mechanisms. The paper draws from a recently completed quantitative survey of 1400 households in the war affected North and East of Sri Lanka. The analysis highlights that exogenous factors such as fuel price hikes contribute to the overall household vulnerability along with endogenous factors such as low level of education of adults or lack of secondary occupation. Further, importance of social networks in coping with shocks such as borrowing from family and employer can be identified as a coping mechanism in the short term, although has implications for longer term chronic vulnerability. The paper concludes highlighting the need for policy level engagement targeting political will to improve fisher wellbeing.

Seeking Our Shared Wisdom: Supports and barriers to co-production in crafting Papahānaumokuākea's response to climate change

HZ Schuttenberg & Heidi Kai Guth

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The widespread disconnect between scientific projections of climate change and the implementation of responsive management actions has escalated calls for knowledge production processes able to exercise a stronger voice within decision-making, and

recently, the concept of co-production has been championed as a potential answer. Co-production refers to a collaborative and dynamic knowledge generation process that aims to create influential knowledge. This case study examines the co-production of a Climate Change Action Plan (C₂AP) for Papahānaumokuākea Marine National Monument (PMNM) and World Heritage Site to better understand the factors that support or impede effective co-production. Our results illustrate that co-productive capacity is a product of the broader socio-ecological context; the capacity and past experiences of each stakeholder group; the character of governance, particularly arrangements for representation and the congruence of formal and informal rules; characteristics of the issue on which the co-production effort is focused; and the co-production process itself.

Changing price, changing catch: An examination of adaptation strategies used by fishermen in Tamil Nadu, India

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After the 2004 tsunami, fishermen and scholars report significant influxes of aid in the form of new, more advanced boats and fishing gear. This aid influx and its lasting effects – coupled with subsidies for diesel, boat retrofitting, and fishing gear – have impacted local socio-ecological systems within the fisheries sector in Tamil Nadu, India. This study examines different adaptation strategies fishermen have employed to deal with changing fishery conditions and the impact local, district and state level fisheries regulations have on their ability to devise such strategies. Qualitative research was conducted in three Tamil Nadu fishing villages to understand how rules mitigate fishers' adaptation responses to external shocks, as well as the impacts of resulting shifts in marine fish catch on fisher livelihoods. We find that fishers adapt by increasing effort when feasible, but resort to gear selectivity when local rules support limiting fishing time or frequency.

Panel sessions **Series 3** **Thursday, 27th of June**
11.00 a.m. – 1.00 p.m.

3.1. MPA/MSP

Chair: Svein Jentoft

Small-scale fishers' responses to spatial closures: The coevolution of rules, ecology and behaviour

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Although it is widely agreed that marine reserves protect habitats and species within the closed area, opinions are challenged on almost every other ecological and social facet of closed areas, especially when advocated for restoring fisheries. The debate is largely driven by variable empirical evidence and gaps in research, particularly in understanding the social responses to marine reserves and how social and ecological responses interact. We argue that the debate needs to move beyond another call for greater interdisciplinarity in marine planning, implementation and monitoring. We contend that ecological and social behavioural responses to marine reserves *coevolve* over time, as do the rules and institutions of the system. Drawing on various sets of knowledge and disciplines, we have developed a framework for understanding the often complex social responses to marine closures that occur at different scales (individual, community, society) and over different timespans, and how these integrate and respond with ecological responses.

Innovation and governability challenges in marine protected areas governance in Brazil

Leopoldo Cavaleri Gerhardinger; Cristiana Simão Seixas; Fabio de Castro
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This paper will investigate the emergence of a window of opportunity for protected areas governing system reform in Brazil. Firstly, we will show how the self-referentiated discourse of institutional innovation at the '*Baleia Franca* [Southern Right Whale] *Environmental Protection Area*' (BFEP) Southern Brazil relates with the

broader crisis in coastal-marine governance in the country. In late 2012, local [territorial] level governing interactions pursuing alternative (innovative) approaches for building a transformative Management Plan (MP) for the protected area coincided with national-level governmental efforts to re-design the national guidelines for implementation of MPs in the whole country. The BFEPA was officially selected by the federal environmental government agency as a pilot-project to design this new governing instrument. Based on interviews and observations of actors' interactions during 2011-2012, we provide a discussion on the challenges related to governability at this phase of process.

Cross border Natura 2000 implementation on the Dogger Bank: evolving new governance arrangements?

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The cross boundary nature of the Dogger Bank Special Areas of Conservation (SAC) and their fisheries was recognized at a Fisheries Management in Marine Protected Areas workshop (FIMPAS) in January of 2011, and an inter-governmental Dogger Bank Steering Group (DBSG) was set up. This steering group, with as members: NL (chair), UK, GER, DK, ICES and the EC, invited the North Sea Regional Advisory Commission (NSRAC) to propose fisheries management plans for the combined Dogger Bank SAC area. This stakeholder-led spatial planning process ran for over a year and stakeholder meetings were held regularly. During the greatest part of this process the NSRAC received facilitation and support from a team from the MASPNOSE project who had selected the Dogger Bank as a case study for their DGMARE funded maritime spatial planning project. The cross border process on the Dogger Bank was scheduled to be completed in 2012, but this complex process is currently (February 2013) still on-going. This paper describes the decision making process on the Dogger Bank with emphasis on the NSRAC activities from March 2011 till April 2012. An analysis of the discourses in the debate on the Dogger Bank is presented, including an overview of opinions and interactions between stakeholders during the studied period. Who teamed up with whom? Were there hidden agendas? What were the different interests and stakes and what influence did the two NSRAC position papers have on the cross border inter-governmental Dogger Bank process?

A critical assessment of the designation process of Marine Conservation Zones under the Marine and Coastal Act 2009

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To safeguard marine biodiversity from anthropogenic pressures, the establishment of marine protected areas (MPAs) is promoted as a key tool of marine conservation law and policy. This is however not a simple solution due to the complexity and fluidity of marine social-ecological environments. How best can we plan MPAs in such environments that have no well-defined social and natural boundaries and in a way that is procedurally just? This paper attempts to answer this question focussing on the on-going UK legal efforts in designating marine conservation zones (MCZs), a new type of MPAs under the Marine and Coastal Access Act 2009. The designation criteria of MCZs break with technocratic decision-making by allowing social and economic consequences to play a role at the designation stage. This paper critically assesses the way this requirement has been implemented in England and what general lessons can be learned for maritime spatial planning and governance.

Impacts of Sagay Marine Reserve as perceived by the municipal fishers in Sagay City, Negros Occidental, Philippines

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The impacts of Sagay Marine Reserve (SMR) were evaluated by exploring the perceptions of municipal fishers from Barangay Taba-ao, Sagay City, Negros Occidental. The aim was to obtain information from local communities to improve the management of the SMR. Multiple methods were used to collect data in August to October 2012. Results showed that the fishing households were poor (based on income and material lifestyle indicators) and the resources were likely overfished resources (i.e., declining volume of fish catch, smaller fish size, disappearance of first class fish, longer fishing time, and increasing number of fishers since its establishment in 1995). There is a need to revise the management plan, increase human and financial resources, introduce income diversification program for the fishers, promote stakeholder participation and representation, enhance the management plan compliance, improve environmental knowledge of local people, address conflicts, create a statistical database, and monitor the resources status over time.

3.2. Ecosystems and Wellbeing

Chair: Tim Daw

Connecting marine ecosystem services to human wellbeing – insights from participatory wellbeing assessment in Kenya.

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The linkage between ecosystems and human wellbeing is a key focus of the concept of ‘ecosystem services’ as promoted by the Millennium Ecosystem Assessment. However the actual nature of connections between ecosystems and the wellbeing of individuals remains complex and poorly understood. We conducted a series of participatory focus groups with five different stakeholder groups operating within a small-scale Kenyan coastal fishery, which included traders and fishers, and men and women. The discussions collected qualitative data on 1) how wellbeing is understood within the community in general, 2) how people perceive their own levels of wellbeing in the present day and 3) how different people’s wellbeing has been affected by social and environmental change over the recent past. An additional round of individual interviews with participants on human needs, quality of life, and discussions around future scenarios supplemented the information. We present the results of this study and frame our analysis around Deepa Narayan’s categorization of wellbeing, which is also used in the MEA framework: Security, material wellbeing, health, social relations and freedoms. We unpack how each of these dimensions relates to the Kenyan fisheries context, using illustrative examples from focus group transcripts and data from individual interviews. Results show how wellbeing links with access to fish, and how a range of changes within the fishery, including expansion of marine parks, declining catches, and rising fish price, affect different people operating within the fishery and can lead to challenging trade-offs and conflict.

Engaging with taboo tradeoffs in coastal ecosystem services and stakeholder wellbeing. Revealing social-ecological dynamics in a coastal Kenyan fishery.

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Coastal governance involves negotiating complex tradeoffs between stakeholders and different ecosystem services. A typical response is technical valuation of ecosystem services, but psychological literature shows that tradeoffs can be deeply problematic for cognitive, cultural and procedural reasons requiring both explicit identification and deliberation. We applied an integrated set of scientific and participatory tools to elaborate tradeoffs inherent in an East-African coastal social-ecological system. The analysis revealed tradeoffs between management objectives such as profitability and food production, as well as between the earning potential and thus wellbeing of different stakeholders. For example the wellbeing of poor, small-scale, female fish vendors was in conflict with objectives of economic efficiency, or ecological condition. These types of tradeoffs are often not recognised in management or policy. Such tools can help stakeholders and decision-makers to engage with complex tradeoffs, which would otherwise be hidden by complexity and psychological biases in favour of win-wins.

Coral reef management in a changing environment: Livelihood responses and governance challenges

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Fishing livelihoods that are dependent on Caribbean coral reefs face an uncertain future with global climate change threatening the integrity of these important ecosystems. This study aims to contribute to an improved understanding of how future changes could impact Caribbean coastal communities, and to recommend management responses suited to regional and local governance contexts. Semi-structured interviews (n=377) were conducted with commercial and recreational fishers in 12 communities across four Caribbean countries (Barbados, Honduras, St Kitts and Nevis, and Belize) to identify perceptions of change in reef-related resources, responses to these changes, and anticipated responses to future changes. In each study country, policy makers and reef managers were also interviewed to explore the efficacy of current management tools, future management needs, and the influence of governance arrangements on reef management. Results will be presented, highlighting common challenges to effective reef governance in the context of declining reef health.

The importance of seagrass ecosystems for Madagascar's small-scale fishers

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There is a growing need for scientists and managers to address all ecosystems in the tropical seascape, which local people depend on. This social-ecological study aims to analyze ecosystem goods and services rendered by seagrass ecosystems, which are valued by local populations, to demonstrate the regional importance of seagrasses. Empirical data to this social-ecological study was gathered in the south-west of Madagascar, by conducting interviews with 60 small-scale fishers. The majority mentioned seagrasses to be the most important fishing substrate, tightly followed by corals. Seagrass-associated fish were mentioned to constitute a big part of the daily catches, with *Lethrinus spp.* and *Siganus spp.* being among the economically most important fish. The majority of the respondents mentioned seagrasses as declining, and that their eventual disappearance would imply serious problems for local fishers. The results show that management towards healthy seagrass ecosystems should be prioritized in line with coral- or mangrove ecosystems to ensure local livelihoods.

Institutional challenges for the sustainability in area of Mangrove in the coast of Amazon

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Amazonia has the largest continue mangrove coastal area of the planet. With the objective to protect this region, in the last decade several conservation areas were created. This research had the objective to compare environmental conservation in one reserve (*Mãe Grande de Curuçá* created in 2002) with the conservation of areas outside of the reserve. Interviews were carried with a sample of the population to understand the difference of environmental conservation base on different institutional arrangements and land property in the two areas. The results showed that there is more conservation inside of the reserve than in the areas that had similar characteristics outside of the reserve.

3.3. Expertise

Chair: Martin Pastors (req.)

Putting the Power back into fishers' knowledge: democratizing science

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Fishers in Stung Treng, Cambodia depend on a rich resource and a crucial set of habitats for the wider Mekong fisheries, yet their involvement in how decisions are made are minimal. Interest in fishers' ecological knowledge directed at the potential usefulness in fisheries management of such knowledge, if properly accessed, validated and translated, has many advocates. Often however, proponents have perhaps inadvertently been instrumental in effectively disempowering fishers and stripping fishers' knowledge of its context and meaning. The authors explore this issue and draw on case study material of fishers' research efforts – known as *Sala Phoum* in Cambodia – in which fishers have purposively undertaken research activities to generate and share information and knowledge, to improve their own management practices and to better represent their own interests in policy arenas. The paper concludes with a discussion of how fisheries science and management can move forward by adopting a more nuanced and power-based approach to fishers' knowledge.

Fishers' knowledge for mapping and understanding the practices: toward bridging the "missing layer". The French case.

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This paper aims to expose and discuss the results of an example of formalization of spatially-explicit fishers' knowledge in France; a kind of "small living heritage" generally neglected. Since 2009, the VALPENA project (Assessment of fisheries in the light of new uses of the sea) is an original "working together" experience, between academics and fishermen, to produce new kind of information in the context of a growing demand for marine space. Today, this experience brings together a fleet of more than 2000 ships, within a partnership with four Regional Fisheries Committees in France, from which we produced a "first layer" of information at a very detailed scale (on a mesh of 3 nautical miles) and at a monthly time step. The geodatabase

built contains millions of data and is interoperable with other repositories (FAO, ICES...) and typologies (FAO names of species, DCF fishing' gear typology...). A second "layer" currently developed, aims to go beyond the "simple" translation of elements integrable in deterministic models, with the identification and analysis of factors which determine spatial practices, with a middle-term scope (since the 1970's). Across this experience, this paper would like to contribute to re-think the role of social sciences in fisheries science as well as the role of scientists and fishermen in fisheries management.

Ultimate and proximate drivers of Caribbean reef health: A common understanding?

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There is an urgent need to improve the management of Caribbean coral reefs. Meeting this challenge requires a common understanding of the threats to reefs among reef managers and resource users. This study compares perceptions of drivers of reef health between key informants (reef managers and policy makers; $n=117$) and resource users (fisheries, tourism and community members, $n=869$) in four Caribbean countries: Barbados, St Kitts and Nevis, Honduras, and Belize. Interview data were coded to identify perceived links between reef health, proximate drivers, and ultimate drivers, creating a set of causal chains perceived to affect reef health. Respondents identified a total of 27 proximate drivers and 90 ultimate drivers, with a total of 197 links mentioned between them. Perceptions of key informants and resource users are contrasted to identify commonalities and differences in perceptions of drivers of reef health, and the implications for a common knowledge base for reef management are explored.

The social dimension of knowledge – exploring the scope for stakeholder inclusion in EU fisheries governance

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EU fisheries management is predominately top down and science driven. This process has proven difficult and often exacerbated by distrust between scientists, fisher's representatives and environmental NGOs. With the Regional Advisory Councils (RACs), however, a stage is set for input of stakeholder knowledge.

Drawing on experiences from the Baltic RAC and inspired by Aristoteles' distinction between knowledge as *technè*, *episteme* and *phronesis*, this paper discusses what the attributes of the knowledge contribution from the fisheries sector is and what limitations and opportunities exist for constructive communicative interaction processes between scientific, technical and social knowledge within this system. It is argued that basic (methodological) distinctions in the way that different knowledge is produced require innovative techniques and new settings for successful communication and interactive learning processes between the actor groups in EU fisheries governance. Some features of such new types of "bridge building" efforts are analysed and discussed in this paper.

The making of marine spatial planning: changing what and how to know.

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Scotland is powering full steam ahead with its adoption of marine spatial planning (MSP) to manage marine resources. Currently Scottish Marine Regions (SMRs) are being designed, within which marine planning partnerships will work to draft regional marine plans. Membership of these partnerships will depend on what the (local) nominee can offer in terms of relevant expertise, skills and knowledge of marine planning. Using in-depth interviews, site visits and document analysis this paper shows how actors are (re)positioning themselves within the new arena of MSP in the Pentland Firth and Orkney Waters Pilot. Given the changing sites and modes of producing the knowledge necessary to implement MSP, stakeholders find new ways to define themselves as 'experts' and transform marine areas into a definable resource through spatial technologies. This study follows the making of MSP and discusses potential effects on the capacities of stakeholders. It contributes to the emerging evaluations of MSP pilots in the UK.

3.4. Governance General

Chair: Jan van Tatenhove

To become truly green: how information brings ecological values into governance arrangements on offshore wind park development at the North Sea

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Wind energy is generally valued as a 'green' energy source. North Sea states increasingly prefer to plan wind parks (far) out at sea. To let wind power be a truly sustainable energy source, the environmental effects on marine life are also to be taken into account. Whilst wind park developers need to present a science-based environmental impact assessment (EIA) to obtain a permit, new governance initiatives are emerging to live up to the sustainability promise of wind. Especially non-state actors become more pro-active in communicating the sustainable whereabouts of wind power to the public. At the same time, ecological valuation of offshore wind parks is characterized by uncertainties and knowledge gaps, resulting in struggles and debates about information. This paper analyses the role of information in bringing ecological effects of wind parks to fore in maritime governance at the North Sea, and determines possibilities, problems and pitfalls.

Arctic marine governance

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The Arctic marine areas are becoming more accessible due to climate change, receding ice and new technology. There is also increasing interest in the resource potential of the region and the prospects of new transcontinental shipping lanes. All Arctic states acknowledge that future industrial activities in the Arctic must be regulated through governance frameworks that put emphasis on the protection of environmental values. However, currently no overarching frameworks are in place that are encompassing key activities such as fisheries, oil and gas development and shipping. In order to implement integrated, ecosystem-based governance, the particularities of the existing governance regimes relating to these sectoral activities must be clarified and taken into account. This paper provides insight into the characteristics of the prevailing governance arrangements and the diversity of actor-networks, rules and norms that affect the Arctic. It also discusses the potential

compatibility of existing governance arrangements with integrated forms of ecosystem-based management in the Arctic region.

Interdisciplinarity, Geographic Information Systems and Governance for Integrated Coastal Zone Management and Marine Fishing

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There is increasing recognition of the need to develop interdisciplinary perspectives for the management of marine fishing in the development of ICZM policies. Approaches are needed that incorporate subjective and objective values into decision making, and recognise that social life cannot be reduced to an entirely quantitative ontology. The aim of this project is to evaluate the potential for developing a multi-disciplinary GIS as a management tool for decision makers that incorporates both spatial and quantitative data, but also qualitative dimensions that uncover socio-cultural values and perspectives. Drawing on non-dualistic conceptual ideas, an approach will be developed to describe relationships that exist between land and sea in the coastal zone, focusing on the coastal zone in the English Channel and southern North Sea.

Tragedy of the few? A political ecology perspective of the right to the sea: The Cyprus marine aquaculture sector.

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Aquaculture appears to be the fastest growing animal-food production fuelled by governmental support, evolved technological assistance and the decrease in the production of wild caught fisheries. Its rapid expansion is accompanied with enlargement of the farming area and sea privatization hence a debate of 'what is just'. This paper provides a political ecology perspective to the discussion on the Cypriot marine aquaculture sector by i) the analysis of the legal framework with a focus on the conservation legal tools and, ii) conducting interviews with the main stakeholders to identify opinions and perceptions on the environmental and social impacts of marine aquaculture. The framework for marine aquaculture in Cyprus covers important aspects including the need for an EIA and yearly monitoring for changes in the environment. This study has identified important weaknesses beyond environmental concerns, which reach concerns on the balance of power with negative impacts on coastal communities.

Integration and cooperation in Marine Governance in Europe

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Marine Governance is a relatively new discipline. This article reflects on processes of integration and cooperation as theorized in Marine Governance, focusing on European seas. Marine Governance cogitates on the on-going European governance debates spurred by initiatives such as the Maritime Strategy Framework Directive, the Integrated Maritime Policy, the reform of the Common Fisheries Policy and the Blue Growth Strategy. The aim of this paper is to understand integration and cooperation in Marine Governance by analysing the linkages between existing governance arrangements for maritime activities (fisheries, shipping, blue energy, tourisms, etc.) and the emergence of new governance arrangements. By means of reviewing different theoretical themes, such as legitimacy, trust and power, this article contributes to an improved understanding of Marine Governance as processes of politics and policy making between nested general institutions at several levels, involving state actors, market parties and civil society.

3.5. Governmentality as a Condition for Governability: How Marine Resources become Governable

Chair: Jahn Petter Johnsen

As indicated by several authors (Berkes 2007; Berkes 2010; Caddy and Cochrane 2001; McGoodwin 1990), marine resource governance is about the regulation of how humans can relate to and exploit their marine resources. Conventional understanding of resource governance assumes that there is a separation between the environment, the people who manage the resource, and those who are managed (Berkes 2010; Jentoft 2007; Kooiman et al. 2005). Governance is seen as interventions based on knowledge feedback. However, this mechanistic perspective where a socially constructed governing system acts upon a natural system of objects to be governed has been seen to be a problematic way of thinking. Therefore, new perspectives seek to redefine these relationships.

These perspectives acknowledge that even if a governance system can still be said to consist of two sub-systems with governed objects and governing mechanisms, many forms of governance can exist, from a local bottom-up self-governance to a hierarchical top-down type of governance. Moreover, it is acknowledged that the

success of governance varies and that successful experiences are difficult to copy (Jentoft et al. 1998; Johnsen et al. 2009a; Ostrom 1990). However, these more holistic perspectives also miss the mark when it comes to what actually makes governance possible, because they still maintain the belief that governability is directly related to the properties of the system-to-be governed and the ability to produce feedback from it. Thus, a third perspective can be that governability is not something that follows from how well a governance system is directly adapted to a system-to-be-governed, but is a result of how both the governance system and the system-to-be-governed are configured together. Thus, the key to understanding governability is to switch focus from the system properties to the instruments that are used in order to reduce a system's complexity into governable objects and actions.

Such an approach focuses on how technologies of power and regulation are used in governance and the consequences of this use. The concept "technologies of power" is inspired by Foucault's "technologies of security" concept and denotes the techniques that governors can use in order to discipline and gain control over the governed (Foucault 2009:8-11). In this perspective governance is about *governmentality* (Foucault 2008; Foucault 2009; Sennellart 2009). Governmentality conceptualises the citizens' willingness to be governed. Through the development of governmentality, the governance system and the system-to-be-governed are merged and form a new kind of governance, where those who govern and those who are governed agree upon what they have to do and about a division of responsibilities. As Lemke (Lemke 2001: 201) writes, even if the state becomes more invisible, it does not abdicate; it retains control through the control apparatus, but governs through indirect mechanisms and leaves more responsibility to the governed.

This panel will explore how this becomes possible and discuss how governmentality leads to governability!

Governability and governmentality in fisheries governance

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More holistic approaches to fisheries governance have the recent years contributed to new understandings of system complexity, while the contribution to understanding what makes systems governable is still rather poor. While it has proved difficult to identify all of the important ecological and social aspects of the fishing industry when making them into viable governable objects, a hypothesis can be that this problem does not necessarily lead to limitations when it comes to governability. An approach could be that that governability is not limited by system properties but rather it is achieved through the actors acceptance and compliance with the objects

and instruments that are deployed. Such an approach points towards the concept of governmentality as a crucial element in achieving governability.

Learning to tell the difference. The governmentality of salmon stocks in the mixed-stock salmon fishery in Northern Norway

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Atlantic salmon management in Norway has been conflict-laden for many years, and the process of building mutual trust between fishers and management/research is demanding, especially concerning the sea-based mixed-stock salmon fishery. One of the main conflict issues is the inability of both fishers and managers to tell the difference between different salmon stocks while at sea. A North Atlantic research project involving genetics, scale analysis and salmon fishers' reports currently aim to define the home region/river of individual adult salmon captured at sea, and thus assess the biological status and origin of stocks which are harvested by the sea-based fishery. The project will inevitably arrive at detailed stock-specific information, i.e. genetic origin, of all Atlantic salmon captured in the project, given the prerequisite to determine the river origin of the salmon. This paper examines the scientific process through which specific salmon stocks are identified, and whether and how specific salmon stocks are made available as governable objects for management. Ultimately, the paper discusses the governmentality of the new salmon stocks. To what extent will fishers and managers accept the new governance objects, and will they contribute in achieving improved governability for Atlantic salmon?

Pragmatism and governmentality

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A recent study of Norwegian fishing fleet, Sønvisen (in progress) developed a fisher typology in which three fisher types were identified: the traditionalist, the modernist and the pragmatist. The first two fisher types were closely tied to ideologies; whereas, the pragmatic fisher was not, but changed conduct rather pragmatically in relation to a changing fisheries environment. The production of the pragmatic fisher, however, was not discussed much.

In governmentality neo-liberalism – which has greatly affected Norwegian fisheries – is seen, not just as ideological rhetoric, but also as creating a social reality that it suggests already exists. Through the use of instruments, government makes individuals' conduct to achieve a political objective. This includes not only direct state

intervention, but also indirect techniques for leading and controlling individuals – technology of power and technology of the self (Foucault 1988, Lemke 2002).

Government and governmentality

Capacity adaptations: from state responsibility to user participation

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The cod fisheries in the Barents Sea are by nature, seasonal fisheries. During 1960 - 70's, more than 100 cod trawlers was introduced to stabilize the catches. Here, the picture of the seasonal based, coastal fisheries was regarded as totally outdated, while the new trawlers were supposed to represent the final solution to all the old problems. However, due to a strong decline in the cod resources early in the 80's, rigid political decrees for the fleet and the end of state subsidies, unprofitable overcapacity soon became visible. Thus, since the early 90's, structural features to reduce the number of vessels and strengthen the quota base for the remaining fleet, were placed on the top of the fisheries political agenda. In Norway, the aim to reduce fleet capacity is the story about transfer of a former state domain/responsibility to decentralization and privatization in terms of market based transactions of bundled quotas and vessels as autonomous self regulation. The transformation of capacity adaptations from a former state responsibility into market adaptations to fulfill state goals goes directly into the governance discourse. While capacity adaptations can be seen as an isolated feature, we demonstrate how the market driven reduction of vessels, heavily depends on other elements of the management regime, which is set to solve totally different tasks than capacity adaptations.

Economizing marine ecosystems

The making of governmentality in modern fisheries management

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How can marine ecosystems be managed? International resource management as a single stock regime is changing as the commitment to ecosystem-based approaches is strengthened. This introduces hard choices in fisheries management. In this paper we focus on the processes and instruments by which ecosystems and their components are made available for management decision making. In particular, we discuss how ecosystem knowledge and uncertainty are adjusted to correspond with the economic

world of numbers, figures and correlations. This refinement is referred to as economization. Economizing ecosystems produces governmentality, as differences across sectors and user groups can be valued and compared. In this way hard choices are transformed into medium, or even easy, choices.

Panel sessions**Series 4****Thursday, 27th of June
2.30-4.00 p.m.****4.1. Tuna Governance in the Western and Central Pacific: Fishers, Institutions and Incentives****Chair: Megan Bailey**

Tuna resources in the western and central Pacific Ocean (WCPO) are harvested by more than 30 fishing nations and provide over half of the global tuna supply. Governance of these resources falls under both national and regional institutions, with regulatory measures being suggested by the Western and Central Pacific Fisheries Commission. National and regional fisheries governance is shaped through various forces including fisher preferences and behaviours, institutional structures, and markets and incentives. In the case of tuna fisheries in the WCPO, these forces can join together to either facilitate or create barriers to effective governance. Generally, institutions structure various incentives (or disincentives) in an effort to steer fishers towards decisions that meet pre-defined goals – largely relating to changes in fishing effort, catch levels or fishing efficiency. In this proposed panel session, these different forces will be discussed with regards to their impact on tuna governance in the WCPO. Each paper presented will tackle tuna governance issues in the western and central Pacific by analyzing the interaction of fishers, institutions and incentives.

This proposed double panel will open with a politically-minded piece investigating the interplay of state rights and regional competence by Mary Ann Palma. It tackles big questions around rights and responsibilities, and how market incentives interact with regional institutions. The next paper, by Liam Campling, explores incentives and institutions, but from the perspective of the supply chain, with a special focus on the US and EU canned tuna market. Myopic government policies can provide a protectionism environment, and this paper argues that this can hinder multilateral cooperation. The next two papers will discuss tuna fisheries in relation to the PNA countries (Parties to the Nauru Agreement). Vina Ram-Bidesi will discuss the effort and motivation behind cooperation in the PNA to develop uniform strategies for achieving economies of scale. Steven Adolf will follow this with an analysis of several management tools, many of which are incentive-based, currently enacted by the PNA. His paper provides a first comparison of the results of the introduction of these economic tools regarding their specific objectives, and their consequences for the supply chain of canned skipjack tuna. The two papers that follow focus on the western end of the WCPO, exploring the link between incentives and fishers or fishing companies in the Philippines and Indonesia. The first paper by Edison

Macusi will discuss decision-making by Indonesian and Philippine fishers at sea, in association with fish aggregating devices (or FADs). FAD fishing is of increasing strategic importance when it comes to fisher decision-making. What efficiency incentives does this technology offer? The impacts of these incentives on the ecosystem and on the institutions that support these incentives are discussed. The second paper, by Megan Bailey, will present the results of a 2-month field study exploring the potential for various incentive-based programs to facilitate improved management of Indonesia's longline, purse seine, pole and line and handline fisheries. This second section wraps up with a discussion by Quentin Hanich related to the burden of conservation, and specifically, how the short-term costs of sustainability should be shared throughout the region.

Private provision of trans-boundary public information: innovations in Western and Central Pacific tuna fisheries

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Tuna in the Western and Central Pacific constitute one of the most contested fisheries in the world, with competing interests over catch allocation, trade and sustainability. One of the underlying drivers of conflict and poor cooperation is incomplete or unavailable information, creating both substantive and strategic uncertainties over management. Governments and industry alike limit the capacity of the many existing tuna information systems because catch, effort and trade statistics are considered politically sensitive and/or proprietary, despite efforts by intergovernmental bodies and donor agencies. This paper maps the existing information systems striving to create more transparency in Pacific tuna and argues that state-based information systems may be unable to overcome political and commercial interests. Our work suggests that information innovation, often led by private actors, can improve state-based management. These improvements are often local, however, and the flow of information across stakeholders can be limited, even when innovation exists. We argue that a new architecture for transparency and accountability is needed for the conservation of WCPO tuna that links existing information platforms, connects investors with local businesses and communities, and increases the availability of private data to public entities.

Beyond Fisheries 'Management'? The role of competition and market power in industrial tuna fisheries

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There is a vast fisheries science and management literature on tuna fisheries. Within which, there is broad agreement that industrial tuna fisheries are over-capitalized, some stocks are overfished and existing management mechanisms are failing. Various institutional 'solutions' to this set of problems have been suggested, but the literature is silent on 'who' are the boats that constitute these fisheries beyond generalizations (and mystifications) to do with vessel flag. This paper argues that by examining the business activities of, and market pressures on, the *firms* that constitute tuna fisheries we can deepen our understanding of the potential for sustainable management. Using the cases of the EU and US markets for canned tuna, and the industrial purse seine fleets active in the Western and Central Pacific, Indian and Atlantic Oceans, we show how market drivers and the competitive strategies of major supermarkets and big brands exert pressure on the supply chain. These vertical dynamics and the horizontal competition among boat-owning firms are translated into deepened pressure on boat-owners, which results in their drive to maximize the extent and intensity of tuna fisheries. In the context of these competitive pressures combined with myopic government protection of the interests of their 'home' firms and the broader anti-inflationary drive for 'cheap food', many governments appear unwilling to take the steps necessary to generate effective multilateral management of tuna fisheries.

Fishers, institutions and incentives: The case study of the Parties to the Nauru Agreement (PNA)

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The paper will reflect on regional co-operation in tuna governance through use of market based incentives by use of the case study of sub-regional group of the Forum Fisheries Agency, the Parties to the Nauru Agreement (PNA) which supplies 50% of the global skipjack tuna for canning. It will review the Group's effort and motivation to co-operate to develop uniform strategies to help each other achieve economies of scale while bringing about more effective management and control on resource use. The paper will discuss the management tools used, such as the vessel day scheme and certification of tuna and some of their broader implications on the resource sustainability, the supply chain of skipjack tuna and regional co-operation. The paper

will illustrate that while the efforts by the Group has drawn considerable attention in terms of the development of tuna policy in the Western and Central Pacific region, the Group continues to face constraints because of the highly sophisticated nature of the tuna industry.

4.2. The Leontine Visser Appreciation Round Table: Challenging Coasts

Chair: Maarten Bavinck

Participants:

1. Dr Dedi Adhuri (Indonesian Institute of Sciences)
2. Mr V. Vivekanandan (FISHMARC, India)
3. Dr Maarten Bavinck (University of Amsterdam)

Description:

This panel marks the retirement of prof. dr. Leontine Visser, chair of the rural development sociology group in Wageningen University, and former chair of the Centre for Maritime Research (MARE). It takes as starting point a volume entitled 'Challenging Coasts – Transdisciplinary Excursions into Integrated Coastal Zone Development' that was edited by Leontine Visser in 2004 and constituted the first volume of the MARE Publication Series. In her introduction to this volume, Leontine emphasized two points that also stand out in the rest of her work: 1. The fact that – certainly for the countries of the South – management can only be considered in the context of development. But development for whom? Are the needs of the weak being sacrificed for the interests of the powerful? 2. Coastal zone development is a transdisciplinary enterprise that necessitates long-term intellectual commitment and cooperation.

We are now almost 10 years down the road. The contributors to the round table will offer contemporary perspectives on these issues from their various regional backgrounds, and subsequently debate their implications.

4.3. Knowledge Production in Action

Chair: Kari Stange

Knowledge production to support decision-making for management of marine resources increasingly takes place in settings where multiple actors are involved. Societal trends to tailor knowledge production to real-world problems, and to democratize the use of scientific knowledge in policy and decision-making, stimulate research collaborations between scientists from different disciplines and between science and non-science actors. Social and institutional barriers, however, often challenge integration of knowledge contributions from multiple sources. The papers in this session will report on theoretical developments and empirical observations emerging from case studies involving multi-actor collaborations aimed at knowledge production in support of marine management and policymaking. Changing roles of science and other forms of expertise are revealed and problems and challenges related to different science-based marine governance systems are discussed.

National frameworks for defining sandbanks. On the role of science in EU harmonization

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Multiple case studies have shown how science advice is affected by national agendas and ways of organizing science advice for policy. Notwithstanding, science is used as a unifying tool in the EU: As a means of overcoming national variations and ensuring an even implementation of EU policies across Member States. For example the Member States' designation of protected areas under the EU Habitats Directive is supposed to be "an exclusively scientific exercise".

By comparing the parallel designation processes on the German and UK part of the Dogger Bank, this paper accounts for the ways in which the scientific advice is shaped at the national level – by national ways of organizing the science/policy interface and national agendas and stakes. The paper concludes with a discussion of the role of science as a harmonizing tool and of the effects such role can have.

The Fisheries Leviathan. Representing and intervening in the Fisheries

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With the new oceans regime, the coastal state was made responsible for resource governance in the fisheries. While the open fisheries commons was associated with a weak management capacity, the new regime called for and authorized the establishment of a much stronger, centralized management agency within government structures: a Fisheries Leviathan. We hypothesize and examine how this agency in practice gained its power through the development of two interlinked capacities: The capacity of representing fish stocks as manageable entities and the capacity of intervening in fisheries activities. This paper is an analysis of the resources and limitations of this entity, with a particular emphasis on the infrastructure and instrumentation by which it gains agency.

Who is an expert? Knowledge interaction and legitimate expertise in EU fisheries management

Sebastian Linke

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Decision-making in EU fisheries management should be based on sound scientific advice. However this idealized model of science-policy interaction is often distorted by socio-economic ambiguities and political complexities. The authority of science is under scrutiny evoking a democratization process, where different types of expertise and knowledge sources could gain new roles in policy. Participatory research methods, science-industry collaborations and other interactions between science and stakeholders illustrate this change process. This paper focuses on the role of different expertise in EU fisheries management using concepts from *Science and Technology Studies* to analyze their interaction. It contrasts theoretical scopes with empirical experiences of 'boundary arrangements' linking science, fisheries and policymaking in EU fisheries management. It is argued that assigning 'spheres of expertise' that allow for appropriate divisions of labor between key governance actors (scientists, fisher's representatives, environmentalists and managers) and entrusting them with particular decisions seems crucial for a successful governance process.

4.4. Sense of Place

Chair: Julie Urquhart

Sense of place in cultural ecosystem services: The case for fisheries management

Tim Acott and Julie Urquhart
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There is increasing interest in the social and cultural impacts of marine fisheries in coastal communities. This presentation explores the contribution that sense of place can make to understanding these impacts. Currently sense of place is an underused concept in resource management in general and within fisheries management in particular. We show how sense of place can be used to make visible a range of social and cultural values that emerge from the process of marine fishing. These values can then be expressed within a cultural ecosystem services framework, potentially helping to make the results accessible to a broader range of stakeholders, including policy makers and those involved in developing sustainable communities. We conclude by introducing the GIFS (Geography of Inshore Fishing and Sustainability) project that is developing sense of place methods to evaluate the contribution of marine fishing to coastal communities in the English Channel and the Southern North Sea.

The Sea and the Desert: Places of Ultimate Freedom? The Ethnography of Liveboards and Houstruckers in the Mediterranean and in the Sahara

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As a result of rapid development of navigation and communication technology, increased living standards, as well as recession and disillusion with the national states' system a constantly increasing number of people from Global North adopt mobility as a way of life. They travel, live and work in boats and houstrucks by the sea and in the desert. The aim of this paper is to contextualise cultural perceptions of the sea, the desert and the movement with the ethnography of liveboards and houstruckers in the Mediterranean and in the Sahara. Their experiences of deterritorialization in perpetual motion and practices of mobile dwelling that epitomise ideals of individual freedom and self-sufficiency will be contextualised 1) with broader cultural-historical framework of ideas and practices attached to the sea and the desert and 2) with the contemporary context of late modernity that promotes, enables and generates »the escape« to these places.

A place to live and fish: Transboundary place making among the trawl fishers of Palk Bay, India.

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Over the last three decades a transboundary fishing conflict has evolved between the Indian and Sri Lankan fishers in Palk Bay. This article makes use of 'place' as a key concept in understanding this transboundary natural resource conflict. By doing a comparative analysis of two mechanised boat landing centres in Palk Bay, the article looks at the significance of 'place making' among the Indian mechanised boat owners both in the sea and on land. With one of the landing centres very close to the International Maritime Boundary Line (IMBL) with Sri Lanka, the article uses a dialectical approach to analyse how social, political and material processes in these trawl centres interact to affect fishery resource usage. By doing dialectical analysis the article also addresses a major concern in place base studies which very often tend to look at only one group of resource users and ignores the interaction of others actors and their influence on place.

People, place and fish: towards a sense of place in inshore fishing communities in the English Channel and southern North Sea

Julie Urquhart & Tim Acott

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Increasing emphasis is being placed on understanding the social value of fisheries and ensuring these are incorporated into policy and management approaches. Further, with the green paper on the reform of the Common Fisheries Policy putting forward the recommendation for a differentiated management regime with the inshore sector being focused on social objectives, it is important to evaluate the contribution of inshore fishing to the social and cultural wellbeing of coastal communities. For many fishing dependent communities, fishing is important not just for economic livelihoods, but plays an important social and cultural role in terms of heritage, sense of place, local identity and social cohesion. The paper will report on existing work carried out as part of a European Interreg 4a 2 Seas project: GIFS (Geography of Inshore Fishing and Sustainability) that aims to understand the socio-cultural value of inshore fishing to sense of place. Firstly, we aim to "measure" sense of place using attitude theory to assess the affective, cognitive and conative attachments that people have to fishing places. Through a questionnaire survey across fishing places in southern and eastern England, northern France, Belgium and the

southern Netherlands, we aim to “quantify” people’s attachments and potentially develop a typology of fishing places. Secondly, we adopt a more qualitative and creative approach through the use of community, researcher and professional photography to understand the diverse landscapes of fishing across the region. Through photography we want to capture how these landscapes are shaping the practice of fishing and how they influence the character and identity of those places. The photographs will be displayed in community exhibitions and used as a research tool to uncover, through community discussion groups, what fishing means to people who live and work in fishing places. We suggest that a such co-constructionist account of the relationship between sea and land can provide a starting point for understanding the cultural landscape that emerges as a result of fishing.

4.5. Don’t Rock the Boat: Enhancing Stewardship to Reduce Instability

Chair: Patrick McConney

Impacts and Shocks as Social-Ecological Interactions

Patrick McConney

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Climate change, climate variability and natural disasters are expected to increasingly impact upon fisheries in Latin America and the Caribbean. The ecosystem approach to fisheries promotes adaptation to such inevitable impacts and shocks, while at the same time reducing the impacts of fisheries (harvest and postharvest) upon the marine environment. Achieving a better understanding of such social-ecological interactions is one of the first steps towards building desirable resilience in small-scale fisheries. Interactions are presented and discussed in the context of knowledge mobilization to establish a foundation for building adaptive capacity and enhancing stewardship in small-scale fisheries.

Impacts and Shocks as Social-Ecological Interactions

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Stewardship and collective actions are strategies by which leading individuals and groups in small-scale fisheries may adapt to shocks and uncertainties. Perspectives are presented based on experiences from fisheries in Latin America and the

Caribbean. Strategies range from enhancing organization and communication by the formation of networks of resource users (formal and informal) or new fisherfolk organizations to engage in decision-making areas, diversification on livelihoods, development of new institutional arrangement to promote alternative fisheries management approaches, the protection of specific habitats like breeding areas as well as the proposal of Marine Protected Areas both based on traditional ecological knowledge, and technological changes in fishing gears to reduce impact on ecosystems and biodiversity. Although government is partially or fully involved, better understanding and engagement arise from strategies fostered by fishers' organizations as well from the participation of bridging organizations such as universities and NGOs in outreach activities.

Impacts and Shocks as Social-Ecological Interactions

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Schemes for participatory monitoring and evaluation such as Socio-economic Monitoring for Coastal Management (SocMon) and others can be means of promoting social and institutional learning aimed at increasing adaptive capacity within fisheries systems. SocMon is a practical and flexible participatory monitoring and evaluation methodology developed specifically for coral reef and coastal management. It is part of a global initiative to enhance understanding of communities and their relationship to coastal and marine resources. Socio-economic information can help fisheries and coastal managers identify potential problems and shocks, mitigate negative impacts and focus management priorities accordingly to achieve management objectives. SocMon is therefore a means of promoting the use of social and economic data in fisheries and coastal management decision-making and its uptake provides the opportunity for improved fisheries and coastal management capacity and therefore conservation of coastal and marine resources. With strengthened capacity for management through socio-economic monitoring, fisheries and coastal managers, authorities, field staffs and communities will also increase their capacity for adaptive management through learning-by-doing. Due to the flexibility of the methodology, new variables for assessment and monitoring may be designed according to site need. Additionally, the opportunity exists for inter-site comparison – SocMon at the spatial level – through the development of core sets of indicators for building a sub-regional picture of the socio-economics of fisheries systems. Experiences with and lessons learned from the implementation of socio-economic monitoring in the English-speaking Caribbean and the potential of SocMon to inform adaptation to impacts and shocks are discussed.

4.6. Methods to Measure Societal Activity Relevant for Development of the Marine Environment

Chair: Eva-Lotta Sundblad

It is evident that pressure from society on natural marine resources and marine services often is unsustainable and that the European Community needs to reduce its impact on marine waters. The Marine Strategy Framework Directive (MSFD) pilots the countries in this effort. The MSFD initial assessment included demand for economic and social assessments. However, no methods or indicators for societal performance are explicitly prescribed in the MSFD. Further on, knowledge about useable methods/tools is not available for everyone involved in this particular policy. The link between activities in the society and environmental pressures is often difficult to assess. Knowledge about the links and to secure the direction of causality is important for decision makers.

This panel gives a possibility to discuss assessment needs and useful methods to measure human societal activity that can identify different drivers behind environmental change. This information is needed for management to be able to prioritize between different actions, and to get feedback of the result.

Structuring societal information for marine environmental management

Eva-Lotta Sundblad, Lena Gipperth, *Anders Grimvall*, Andrea Morf

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The Marine Strategy Framework Directive (MSFD) adopted by EU emphasizes the need for integrating environmental and social analyses. We propose and test a general framework for identifying and structuring environmentally relevant societal information. Our framework, called BPSIR (Behaviour, Pressure, State, Impact, Response), is compatible with the widely recognized DPSIR (Driving forces, Pressure, State, Impact, Response) framework, but makes actors and their behaviour more visible and renders the meaning of impact more precise. In particular, we distinguish between: (i) actors directly involved in activities causing disturbances, and (ii) actors that indirectly drive the use of marine resources. Three case studies of chemical and biological disturbances of the Swedish parts of the North Sea and the Baltic Sea demonstrated the need for balancing the current ecosystem monitoring with systematically collected and organized information about both direct and indirect actors, their adaptation to policy measures, and the role of general societal trends in consumption and production.

"Assessment of governance structures in coastal management: as social network analysis" The authors are Friederike Lempe, and Harry Vincent Strehlow, from Thünen-Institute of Baltic Sea Fisheries, Rostock Germany.

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Social network analysis (SNA) has proved itself as a powerful tool in assessing natural resource management practices. This study aims at analyzing network structures and institutional ambiguities in a coastal management setting in the southern Baltic. These coastal areas act as important spawning grounds while at the same time spatial use and anthropogenic impacts are increasing. Various regional responsibilities, which often lack sufficient coordination and which sometimes even pursue opposed targets prevent effective habitat management. Qualitative interviews are used to identify the different stakeholders within the multi-level governance system. Based on SNA we examine interaction, communication and power asymmetries between the stakeholders in the (political) negotiation process. Preliminary findings will be used to further explore to what extent stakeholder interests in the field of sustainable aquatic habitat management are promoted or restricted concerning legitimacy, effectiveness and participation. Finally, we will discuss the potential use of SNA as methodology for socio-political performance within the Marine Strategy Framework Directive.

"The social and societal importance of the North Sea".

Ellen Hoefnagel and Marc-Jeroen Bogaardt

LEI/Wageningen University Research, the Netherlands

The social importance of the (Dutch) North Sea refers to the relationship or connection between users of the North Sea on the one hand and the North Sea and the marine environment on the other. The quality and condition of the marine environment as an open space determine the social utility value, the social experiential value, and the social future value. These social values and the concept of social capital have all been examined in order to reflect the social importance of the North Sea. Roughly twenty indicators have been selected to reflect the current social importance of the North Sea. These indicators can be linked with initiatives of one or more groups of users. For each indicator a maximum value has been ascertained, which is applied as a reference for the assessment. The assessment has been indicated by three colours: green (high score), orange (middle score) and red (low score). Finally, with this method, the social importance has been qualified and can be used

as a baseline measurement for the MSFD. Next to this it is discussed whether social and societal importance of the North Sea is synonymous or that societal importance need to be measured according to other indicators than the social indicators.

Panel sessions**Series 5****Thursday, 27th of June
04.30-6.30 p.m.****5.1. Tuna Governance in the Western and Central Pacific: Fishers, Institutions and Incentives****Chair: Megan Bailey****Effectiveness of applied management instruments on improving the sustainability of PNA skipjack fisheries**

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The eight small nations of the Parties of the Nauru Agreement (the Federated States of Micronesia, Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu) together are managing a vast maritime area in the Pacific which is considered the main worldwide fishing ground for the skipjack tuna, the raw material for the canned tuna industry. Unsatisfied with the role of the distant water fishing nations in the local RFMO and the resulting lack of effectiveness on sustainability issues, the PNA countries introduced their own set of management tools as to guarantee a more sustainable catch in the industrial scale purse seine skipjack tuna fisheries. The objective of these measures is to maintain the skipjack stock on a sustainable level, guarantee future catches, create more local income and local wealth through jobs and reduce bycatch of juvenile tuna and other marine species. The instruments applied consist of MSC certification and 100 % observer coverage, Eco labelling and a buyer policy towards the retailers, FAD closures, high sea pockets closures and introduction of the Vessel Day Scheme. This paper provides a first comparison of the effectiveness of introducing these tools regarding the specific objectives, and their consequences for the supply chain of canned skipjack tuna.

Characterising small-scale tuna fisheries from Indonesia and the Philippines: A review

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Small-scale tuna fisheries in the Philippines and Indonesia depend largely on the intensive use of fish aggregating devices (FADs), which are called *payaos* in the

Philippines and *rumpons* in Indonesia. The popularity of *payaos* and *rumpons* is based on the associative behaviour of fish to floating objects such as logs or man-made structures. By capitalizing on this relationship, fishers exploit tuna strategically. More than 20% of the total tuna production from the Western and Central Pacific Ocean (WCPO) comes from Indonesia and the Philippines, meaning improving our understanding of fisheries in these countries has never been more relevant. Using fisher knowledge and local interviews among fishers in Bitung (Indonesia) and General Santos City (Philippines), and secondary data from different fishing grounds in both countries, updates on the types of vessels and fishing gears associated with tuna fishing, fisher behaviour, and tactics in exploiting tuna stocks are provided. This research is an effort to better understand the incentives, from an efficiency standpoint, that FAD fishing provides, and to explain how fishers operate to consolidate their fishing effort around FADs. We also report on the various fish species that are commonly targeted by fishers around FADs. Given the importance of tuna for domestic food consumption, the export market and the ecosystem, there is increasing pressure to manage these fisheries more sustainably. Regulations on FAD fishing, which would focus on fisher behaviour instead of just focusing on the fish alone, may be one management option.

Incentives as a compliment to Indonesia's regulatory framework for tuna fisheries management

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State-based regulation has historically been the rule of thumb in Indonesia, whereby policies set at the national, provincial and local levels have formed the way fisheries operate. Although layers of Ministerial and Presidential decrees relating to tuna fisheries management exist, this massive regulation is anything but effective, and has failed to facilitate reliable data collection programs, compliance with international management measures, or a recognizable decrease in illegal, unreported and unregulated fishing (IUU). Recent developments in the globalization of the fisheries sector, along with increased consumer awareness and engagement by conservation-based non-government organizations (conservation NGOs) has raised questions about the potential for market-based measures and incentive programs to supplement this traditional regulatory system. Such programs have largely been implemented in countries with strong state-based regulatory systems. The question thus arises whether or not such types of programs could be successfully implemented in countries lacking effective regulatory mechanisms, such as Indonesia. In this paper we report on the current disconnect between Indonesia's regulatory system and the goals and perceptions of fishers, called the incentive gap,

and explore whether this incentive gap can be reduced through incentive mechanisms geared at either strengthening state-based control, or circumventing it all-together.

Distributing the Conservation Burden in the Western and Central Pacific Tuna Fisheries

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Determining the distribution of the conservation burden is a critical challenge to the conservation and management of the Western and Central Pacific tuna fisheries. Given current levels of overfishing and overcapacity, some or all of the participating States must necessarily compromise their interests and carry some share of the conservation burden. This paper proposes a new approach to distributing the conservation burden in the Western and Central Pacific tuna fisheries. Such an approach would enable the Western and Central Pacific Fisheries Commission to transparently ensure that conservation burden distributions are consistent with international obligations. The paper recommends that the WCPFC considers developing a decision making framework that would enable existing scientific processes to determine the necessary extent of conservation measures, while a new conservation burden methodology would then determine the implementation of the measure and its impact on each member.

5.2. International Guidelines for Securing Sustainable Small-Scale Fisheries: Implementation through the Human Rights Based Approach

Chair: Rolf Willmann

The 29th Session of the FAO Committee on Fisheries (COFI) held in February 2011 recommended the development of international guidelines for securing sustainable small-scale fisheries, based on the increasing recognition of small-scale fisheries as a principal contributor to poverty alleviation and food security and the guidance provided by a number of global and regional conferences and consultative meetings exploring how to better bring together responsible fisheries and social development in coastal and inland fishing communities. Facilitated by FAO the guidelines development process has directly involved almost 4000 stakeholders in 2011 and 2012 at the local, national, regional and global level. The outcomes of this process will inform a Technical Consultation in May 2013 where the final text of the guidelines will be negotiated. This text will then be submitted to the FAO Committee on

Fisheries for approval in July 2014. From previous events and the consultations, the human rights based (HRB) approach emerged as a comprehensive set of moral and governance principles and standards to safeguard and better the future of the communities who depend on fisheries for their livelihoods, income and for food and nutrition security. Policies and programmes in support of sustainable fisheries development should therefore seek the fulfilment, or progressive realization, of basic human rights as reflected in international human rights law. In a recent report to the UN General Assembly, the UN Special Rapporteur on the Right to Food stressed that linking the content of the guidelines to the norms and standards of international human rights law, including the right to food, is essential. He recommended that states involve local fishing communities in the design, implementation and assessment of the fisheries policies and interventions affecting them, in accordance with human rights norms and standards. As a process, the human rights based approach seeks to increase awareness among fishers of the rights they are entitled to and empower them to claim these rights through collective or other actions. These mobilizations, encourage fishers, fish workers and their communities to hold local and national governments accountable, realizing the full range of freedoms applicable to them as citizens and people. The HRB approach can help to ensure the objectives of the guidelines are not undermined by developments in other areas: ensuring coherence across policy areas is a key tenet of the HRB approach. This special session will explore pathways to influence national and regional policies, strategies, plans and actions in the spirit of the HRB approach. More specifically, it will provide an opportunity to explore and discuss, *inter alia*, the required institutional and incentive structures, potential implementation constraints and opportunities for support and partnerships for bringing the Guidelines into effective implementation. More information on the small-scale fisheries guidelines can be found at:

<http://www.fao.org/fishery/ssf/guidelines/en>

Panellists will be identified among Mare participants.

5.3. Knowledge Production in Action

Chair: Kari Stange

Ocean governance in a sea of ignorance

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With the turn towards integrated marine governance, management objects and actor-networks are becoming increasingly complex. More comprehensive processes of

knowledge production are aimed at governing cumulative impacts and multiple spatial claims. Because of the complexity and urgency of the questions that expert fora deal with, a large focus develops on what is unknown. The implication is that marine governance is characterized by continuous non-knowledge production; an awareness of unknown factors that must be taken into account for future planning and action.

Based on document analyses and qualitative interview data, this paper has an empirical focus on processes of (non)-knowledge production, concerning the consequences of potential future petroleum activities in the northeastern Norwegian Sea. In this case study, knowledge gaps become negotiated objects that are used strategically in planning processes. We discuss the boundaries between knowledge and non-knowledge and explore how non-knowledge enables and obstructs effective and legitimate integrated marine governance.

Coping with uncertainty, complexity and ambiguity in fisheries management through participatory knowledge development

M.A. Pastoors, C. Ulrich, D.C. Wilson, C. Röckmann, D. Goldsborough, D. Degnbol, L. Berner, T. Johnson, P. Haapasaari, M. Dreyer, E. Bell, E. Borodzicz, K. Hiis Hauge, D. Howell, S. Mäntyniemi, D. Miller, R. Aps, G. Tserpes, S. Kuikka, J. Casey.

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The legitimacy of the scientific underpinning of European fisheries management is often challenged because of perceived exclusion of fishers knowledge and the lack of transparency in generating scientific advice. One of the attempts to address this lack of legitimacy has been through participatory knowledge development in JAKFISH project (Judgement and Knowledge in Fisheries Management involving Stakeholders). Participatory modelling was explored as a tool to enhance mutual understanding and to increase legitimacy of the knowledge base for fisheries management. Joint problem framing was seen as an essential step for participatory modelling. Through social network analyses we found that the number of connections and the frequency of interactions between individuals in different groups (science, fisheries, eNGOs, policy) provides important clues on the potential effectiveness of participatory approaches.

Expanding the knowledge base for EU fisheries management through stakeholder involvement in long-term management plans

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Fisheries management in Europe involves many actors with diverging interests. Fishers, dependent industries, NGOs, scientists, managers and policymakers are challenged to seek a common understanding around problems and to find appropriate solutions. In the process of doing so, various constellations of actors engage in deliberations and negotiations around scientific and non-scientific knowledge claims. This paper takes an approach inspired by organisation management to explore how knowledge is used and produced in interaction between different actors in the process of developing long term management plans. Such plans are increasingly used as instruments within EU fisheries management and several Regional Advisory Councils are involved in collaborations around making them. Examples from on-going initiatives to develop management plans for North Sea fisheries elucidate challenges encountered and strategies used to overcome such challenges when aiming to produce knowledge in collaborative settings.

5.4. Transitions

Chair: Derek Johnson

Fisheries Dependence in Transition

Kristen Ounanian

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Historically, the fishing industry and its ancillary sectors occupied a central role in the economies of coastal communities; however, as stocks decline and fisheries management moves toward rational, tradable quota schemes, employment opportunities in the fishery have diminished. Some communities may have few other economic options or strongly hold to their identities as “fishing villages,” but others may move in a new direction. Oftentimes fishing is not the sole economic driver in developed countries like Denmark and the United States, but some communities endeavor to hold to the historic ties of the industry. Nevertheless, not all fishing communities or regions are built alike, but all too often research addresses these entities through a single orientation. This project seeks to develop a typology of

fisheries dependent communities in order to explore their orientations toward change, economic development, and sense of place. At the MARE conference session I hope to present the preliminary findings from my first case (Hirtshals, Denmark), as well as the key points in the present literature addressing coastal communities and their positions and perceptions of fishing, transition, and sense of place.

Sharing the Risk-Searching for Sustainability: The Marketing Chain Adjustment in Waworada Bay-West Nusa Tenggara

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Experiencing classical problems with abundance of small pelagic catch based on seasonality, the marketing chain in Waworada Bay adjust to handle the “flood” of fish. To absorb the large amount of catch, new employment creation as buyers become one adjustment in the mechanism. Almost every household have member of family as fish traders. This adjustment already perform as the best mechanism to reduce the loss of perishable productions in term of price and quality. However, the adjustment produce more complicated patron-client relations among the fishermen and the traders. The traders as patron have to compete each other to have “clients” by offering loans. On the other side, the fishermen have more flexibility to choose the patrons that could be more than one. Using qualitative data that was collected through in-depth interviews, this paper aim to analyse the adjustment of the marketing chain mechanism with the impact on risk sharing and its opportunities on sustainability.

Gendered adaptive capacity to climate change

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In the face of serious climate change threats there has been a shift in the discourse - from mitigation to adaptation. However, what adaptation means to people living in poverty is not well understood and defined and even less is known about how it is gendered. We address the latter by presenting results from a pilot study analyzing social aspects of adaptive capacity in tropical seascapes in Tanzania and Mozambique. The results show the responses of men and women to key aspects related to adaptive capacity such as knowledge and awareness to climate change, education, income, material assets, livelihood diversity, membership in associations, etc. These aspects are further linked to Katz’s typology of resilience, reworking and

resistance. All in all, the situation shows a disparity in adaptive capacity which constrains agency for both sexes, however with women being more vulnerable than men.

“Thinking like a fish”: adaptive strategies for coping with vulnerability and variability emerging from a relational engagement with Kob

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Based on ethnographic fieldwork amongst commercial handline fishers in the Southern Cape coast fishery of Stilbaai in South Africa, the paper explores a number of adaptive strategies in which fishers engage as means of negotiating constantly shifting vulnerabilities and variability on land and at sea. Arguing that many of these fishers try to achieve a balance where possible between profit and sustainability, we suggest that their relative success is due in part to the ways in which they “think like a fish”, enabling them to work with and respond to variability in the prevalence and behaviour of their target species, Kob. Drawing on a relational ontology approach, ethnographic examples, and the work of Jullien, von Uexküll and others, we show that “thinking like a fish” is an interactive, iterative process in which actors are simultaneously shaped by and in turn shape particular versions of self and fish. Finally, we suggest that the act of “thinking like a fish” points to new possibilities for conservation and management knowledge which might move beyond fortress-style conservation and incorporate local fishing knowledge into management paradigms.

Should I Stay or Should I Go? Changing human-environment relations and coastal livelihoods from a wellbeing perspective

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Outmigration in response to environmental change is common in small coastal communities of Brazil’s Atlantic Forest. We use a social wellbeing approach to examine how people in the fishing village of Ponta Negra (Paraty, Rio de Janeiro State, Brazil) have experienced historical changes in their environments and how they relate these changes to their desires, aspirations and quality of life. While participation in the fishing economy during the 1970s improved quality of life by facilitating access to urban centres and cash income, it also created social differentiation within the community. This has affected individual aspirations and opportunities, including the ability to participate in the emerging tourism economy. Older people find their wellbeing closely related to the now declining fishery and to

outdoor life more generally. However, given poor employment prospects in the community, they expect their children to emigrate and integrate into urban society. Nonetheless, out-migrants value remaining connected to their natal place. Natural resource management and social policy would benefit from incorporating insights such as these from a social wellbeing lens.

5.3. Communities

Chair: Kevin St. Martin

Institutions for managing common-pool resources: case of community-based shrimp aquaculture in northwestern Sri Lanka.

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Large-scale shrimp aquaculture run by large companies can have major social and environmental impacts. Can community-based approaches be used instead? We examined three coastal community-based shrimp aquaculture operations in NW Sri Lanka using a case study approach. These shrimp farms were individually owned by small producers and managed under community-level rules. The system was organized into multiple layers of institutions: community-level shrimp farmers' associations; zonal level associations; and national level shrimp farming sector association. Bottom-up approach and participation were the main characteristics of decision making. The top layer was represented by a joint body of government and sector association. Paper evaluates the effectiveness of this bottom-up, multi-level institutional structure in managing shrimp aquaculture. Private shrimp aquaculture ownership with community-level institutions, and government oversight and coordination generally works well. Some of the shortcomings of the existing governance system are identified, and policy implications are explored for further improving effectiveness.

Understanding “Community Support” towards Marine Protected Areas in the Philippines

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Community support towards MPAs is often considered an important factor in their success and sustainability yet little has been done to understand what is meant by it. This study deepens our understanding of “community support” by explaining what it involves and what influences it. I define community support as a combination of MPA related attitudes and behaviours. Many factors were found to influence support through a multitude of ways. However due to the plurality of factors identified, their interconnectedness and the way their impacts on support vary between individuals within a community and through time makes it clear there is no solution as to which set of factors are necessary for prolonged support. Nevertheless I argue we now have a clearer idea as to how the MPA design, its management and its impacts on the community and individuals within it can impact support of the community.

Local Fishing Accord and its regulatory implication in Fisheries governance in the Amazon Estuary

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The exploitation of fisheries resources in the Amazon estuary region has provoked not only a decrease of fishing stock but also an increase of social conflicts. To resolve these conflicts and ensure sustainability of fisheries resources, several communities have created local fisheries management mechanisms which are commonly known as fishing accords. Most of these accords in the Estuary are not regulated by the State. The paper examines the existing fishing accords in the Estuary Region of the Lower Amazon region of Brazil and compare them with the floodplain Amazon experience where most of these accords are regulated by the State. Although there are several researchers studying the fishing agreements in Brazil, especially in the Amazon region, there are very few academic productions underlying legal discussions about the regulation of fishing accord and its implication in the fisheries governance.

Panel sessions**Series 6****Friday, 28th of June
09.00-11.00 a.m.****6.1. Options for Ecosystem-Based Marine Management in Europe: Stakeholder preferences and governance models for the implementation of the Marine Strategy Framework****Chair: Judith van Leeuwen**

This panel will present the results of the Governance work package of the EU FP7 funded project Options for Delivering Ecosystem-based Marine Management (ODEMM).

Stakeholders' perceptions on their Regional Sea governance. Lessons from the Mediterranean and the Baltic sea.

Charlène Jouanneau (Innovative Fisheries Management and Aalborg University Research Centre, Denmark)

The rise of awareness for the need of sustainable practices and ecosystem-based approaches to European seas has led the EU to adopt the Marine Strategy Framework Directive (MSFD) in 2008. This directive suggests Member States to cooperate with each other and third countries around each Regional Sea for an effective implementation of the programme, which aims to reach Good Environmental Status (GES) by 2020. An increase in cooperation might be a strong driver to obtain what is called "good governance". But is it the only driver? What are the perceptions upon a tailor-made governance to ensure ecosystem-based management (EBM) realization among the stakeholders leading activities occurring at sea? Through 2 case studies, one in the eastern Baltic and one in the South of France, we propose to list advices from various horizons. We interviewed stakeholders from the several sectors with a political, economical or societal importance: fisheries, non-governmental organisations (NGOs), science, ministries of environment, shipping industry and port authorities, coastal tourism. Drawing from their perspectives and from recent literature and meetings reports, we look at levers that may help a more integrated regional sea socio-ecosystem in the Baltic Sea and the Mediterranean.

Drivers and scenarios for regional cooperation in implementing the MSFD

Luc van Hoof and Astrid Hendriksen

IMARES, Wageningen University and Research Centre

Implementing the EU Marine Strategy Framework Directive explicitly calls for regional cooperation between the EU Member States in the different regional seas. This regional cooperation, although set in a general framework of EU Member States and non-EU states utilising existing Regional Sea Conventions as focal point, develops along different tracks. Based on a series of interviews with different stakeholder groups in the different regional seas the drivers for this regional cooperation were determined. These drivers were used to develop a set of scenarios of possible futures for cooperation at the different regional seas. In this paper we present the result of this analysis and describe the different scenarios developed.

Fishing for opinions: stakeholder views on future management of the European Marine Environment

Astrid Hendriksen and Charlène Jouanneau

Mixed Methods

Acquiring knowledge of stakeholder perspectives on the Marine Strategy Framework Directive in four European Regional Seas is crucial for successful implementation. Therefore a Survey is conducted among sectors active in the field of marine management. This article shows that stakeholder views on decision making structures, efficiency, capacity & willingness to cooperate, institutional ambiguity and stakeholder involvement around future management of the European Marine Environment are closely related to how they experienced the consultation process so far. The Survey results also demonstrate that the more likely a gap is perceived between the current, the ideal and the foreseen situation according to the implementation of the Marine Strategy Framework Directive, a wide variety in future preferences occurs about regional cooperation in the European Marine Environment. This article concludes that future possibilities of regional cooperation in the European Marine Environment not only differ for every European Sea and but also differ for all sectors involved.

6.2.Engaging gender for sustainable fisheries livelihoods and improved social wellbeing: perspectives from the global North and South

Chair: Easley Britton

Using a gender perspective to improve marine conservation and fisheries management programs

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Women and men play different roles in fishing communities around the world, however in all communities the failure to adequately recognize gender as an important factor in the design and implementation of coastal and fisheries management efforts results in lost opportunities to improve conservation practices and ensure secure, viable livelihoods. The Wildlife Conservation Society (WCS) conducted a rapid assessment of fisheries and livelihoods issues across 9 countries where we have marine conservation programs (Bangladesh, Belize, Fiji, Gabon, Indonesia, Kenya, Madagascar, Nicaragua, and Papua New Guinea). Within that framework we focused specifically on how we could use a gender lens to identify opportunities to improve community-based fisheries management through the engagement, empowerment, and leadership of women. We identified three areas of consideration that we will use to improve the effectiveness of our marine and coastal management programs, especially in terms of how these programs can better contribute to improving local livelihoods and the food security needs in poor coastal communities. These areas of consideration are: (1) to consider the entire fisheries value chain when designing projects, rather than focusing solely on actions targeted at how fish and other marine species are harvested; (2) to empower women to be involved in decision-making and resource management processes, although women are key players throughout the fisheries value chain, they are often marginalized from decision-making processes; and (3) to carefully determine throughout a fisheries management or conservation project the extent that approaches might be benefiting one sector of society over others especially to determine any unintended, negative consequences for poverty, livelihoods, and human well-being.

Getting Gender on the Aquaculture and Fisheries Development Agenda in Asia-Pacific: 20 Years of Asian Fisheries Society Experience.

Angela Lentisco & Meryl J Williams

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The fish sector is experiencing rapid, gendered changes and agencies working within it need to focus on the two areas of greatest gender equality: economic participation and political empowerment. Since 1990, the Asian Fisheries Society (AFS), a professional body, has supported increasingly important symposia and activities on women/gender in fisheries and aquaculture. In the AFS experience, the lack of support for substantive programs of gender research and development has made progress slow and innovations rare. Recent attention from mainstream fisheries and aquaculture agencies, although promising, needs to be strengthened and scaled up. Achieving gender equality in the fish sector is daunting, however, because of the nature of the sector itself and because society at large is weak in these themes. It is necessary to take action by securing policy support from governments and international organizations for gender specific interventions, building the capacity of fisheries and aquaculture researchers through the provision of specific training materials, and ensuring that a serious gender program is on the agenda of all fisheries and aquaculture organizations.

A ‘provocation’ on Maritime masculinities – and why they matter for marine resource management.

Edward Allison

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[Paper forthcoming]

Chasing the Fish—on Shore: Livelihood Adaptations of Trivandrum Fisherwomen to Decline in Beach Landings and Changes in Marketing Systems

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That historically, the men in the marine fishing community went fishing and the women took care of post-harvest and marketing is a cliché that must be applicable to most marine fishing communities across the world. The Indian situation was no different. However, modern fisheries development initiated by the state and picked up by market forces has brought dramatic changes in fisheries livelihoods. While the

gendered division of labour itself has not been altered, the livelihoods of women have declined significantly across the coast. In this dismal scenario, a few pockets stand out as shining examples of fisherwomen's resilience and adaptability to changing contexts. The paper describes and discusses the case of the fisherwomen of Trivandrum District who have adapted to the various changes in the last 50 years and have managed to grab the lion's share of the fresh and chilled fish market in a district with high fish consumption. Not being content to depend on the catch of the menfolk in their villages, the women travel far and wide to obtain fish from whole sale markets in the district and landing centres that are a few hundred kilometres away. If the 25,000 sea-going fishermen of the district are able to get a decent income for around 100 days in a year, the 10,000 fisherwomen involved in fish-vending, work for 300 days in a year and contribute around 60% of the income of the fishing community. However, this extraordinary contribution is rarely appreciated and the women continue to face huge hurdles in the form of contractor dominated markets that are distinctly unfriendly to women, lack of access to affordable public transport, continuing dependence on moneylenders for credit and lack of rights to their spaces in many of the way-side markets

6.3. Partnerships and European Fisheries

Chair: Merle Sowman

Partnerships as a mechanism to facilitate integrated knowledge production - Lessons from two case studies in South Africa

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It is now widely recognised that knowledge required for coastal resource management is generated in various knowledge domains – natural science, social science, policy, management and traditional or local knowledge. It is further acknowledged that the exchange and management of knowledge between these knowledge domains is necessary in order enhance understanding of these complex socio-ecological systems and identify creative and appropriate management solutions. Yet in the coastal decision-making arena in South Africa, the natural science paradigm dominates and real integration of other knowledges and experience is very limited. Researchers have provided a number of reasons for this lack of integration including 1) the different values, epistemologies and methodological approaches of different disciplines, 2) high levels of specialization in a particular field reduces the ability to embrace new and different knowledge; and 3) the different worldviews and realities that exist amongst different knowledge

producers and decision-makers. However, our research in two small-scale fishing communities in South Africa suggests that the power dynamics that exist between knowledge producers is a critical factor in terms of which knowledge counts and is valorised. However, creation of knowledge networks and partnerships (between local resource users and external agencies such as universities, NGOs and CBOs) plays a very important role in empowering communities to claim their rights and challenge knowledge and management systems that are founded on natural science paradigms and fail to take account of other disciplinary insights as well as local and traditional knowledge. This paper reports on two such processes underway in South Africa. Processes and mechanisms that facilitate greater respect for different knowledges and worldviews and lead to greater knowledge integration, are discussed.

Transdisciplinary knowledge integration for the resolution of environmental conflicts. Examples from the Swedish West coast

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High anthropogenic pressure on coastal ecosystems, competing and conflicting interests in the use of natural resources, and climate change are major challenges for the sustainable management of coastal socio-ecological systems. Success of coastal resource management requires transdisciplinary analyses and integration of knowledge for the resolution of natural resource use conflicts. In this paper a process-oriented conceptual model for the integration of knowledge relevant for the management of coastal resources is developed. This model is illustrated with examples from coastal conflicts studied in the ongoing project SECOA (Solutions for Environmental Contrasts in Coastal Areas), i.e. case studies of Gothenburg and Malmö metropolitan areas. Deficits in the practice of knowledge synthesis and cooperation in conflict resolution are identified. With regard to the deficits identified, suggestions are discussed for the development of locally adapted strategies for multi-scale adaptive governance of coastal resources that meet the requirements of resilience and long-term oriented sustainable resource management.

Fishing in the margin? Small scale fisheries in the Netherlands.

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Small scale fisheries in the Netherlands have hardly received any research attention and have been quite invisible in the fisheries policy arena. Lately, attention for the

small scale fisheries sector is growing. This growing attention is due to processes like the development of sustainable seafood certification and nature protection. Now that the focus on small scale fisheries has grown, it becomes apparent that a clear definition of what small scale fisheries means in the Dutch context is missing. In this paper we suggest a definition of the Dutch marine small-scale fishing sector, and describe the process by which we came to it. We followed a structured approach to come to characteristics of what is 'the small-scale fishing sector' in the Netherlands. In doing so we worked together with the fishing sector, scientists and policy makers. The definition will be useful in discussions on management of the Dutch small scale fisheries.

Identifying and ranking social sustainability issues for cod and haddock fisheries in the northeast Atlantic

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To assess social sustainability of capture fisheries, indicators have been proposed. However, the identification of the most important social sustainability issues, normally the step before defining indicators, has not been investigated. As part of a joint project with small and medium enterprises in fisheries, this study aims to identify and rank social sustainability issues for cod and haddock fisheries in the northeast Atlantic. To get a broad societal view, different stakeholders in cod and haddock fisheries are invited to take part in a survey consisting of two rounds. The first round of this survey serves to create a full list of possible social sustainability issues, while in the second round the stakeholders are asked to rank the issues in this list. The rankings will be used to establish which social sustainability issues are most important for cod and haddock fisheries in the northeast Atlantic. Identifying the most important issues, and next defining the best indicator(s) related to each issue, will help to improve the social sustainability of the sector to the benefit of stakeholders.

6.4. Ecosystem-Based Management/ Smallscale

Chair: Svein Jentoft

Challenges and Opportunities for the Implementation of Ecosystem-based Fisheries Management: An experiment in Lombok Island, Indonesia

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Conventional single species fisheries management has failed to bring fisheries bio-ecology, economic sustainability and social justice. In the last decade (50 years) or so, Ecosystem-based Fisheries Management (EAFM) has been promoted to replace conventional management practices. It is believed that EAFM, which highlights the importance of considering ecosystems as a management unit, and that people are an integral part of it, will bring fisheries management closer to reaching its goals. International agencies such as FAO, EU, etc, are very supportive for the adoption of EAFM. One such project, is being led by WorldFish, and funded by EU. This is a regional project carried out in Indonesia, Philippines, Solomon Islands, and Tanzania for experimenting with EAFM approaches to small-scale fisheries in tropical developing countries. This paper will discuss the first year and a half of the project implementation in Indonesia with special highlights on opportunities and challenges for the establishment of EAFM. In regard to the first, we will argue that we can consider the existence of various but not connected community developments, together with externally -led initiatives on the ground (sites) as for EAFM development. Nonetheless, the issue of how to link these activities and initiatives so that they become integrated, and become truly ecosystem-based is a serious challenge. We will discuss how we are facing this challenge..

Enhancing governance systems in small-scale fisheries through an ecosystem approach: The case of Bagamoyo coastal fisheries, Tanzania.

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Using an ecosystem approach to fisheries (EAF) to improve management of small-scale fisheries (SSF) has a great potential in enhancing their contribution to poverty reduction. This paper documents the preliminary results from a project using the EAFM approach in coastal communities along Bagamoyo district, Tanzania (2012-2014). The objectives include; assessing existing institutional arrangements and understanding how an EAFM can overcome barriers to effective SSF management; to

develop EAFM strategies and actions for small-scale fisheries management, and; to strengthen the capacity of local fishery stakeholders and government agencies to collaborate and work within an EAFM. At this stage, challenges related to fisheries governance at multiple levels, ie from the national to the grassroots illustrate the contradictions inherent in broad-based co-management frameworks, where several issues such as multiple resource-users and multiple decision-making powers within and beyond the fisheries influence meaningful collaborative management interventions, issues about equity and the performance of grassroots-based institutions.

Efficacy of Rights Based Management of small pelagics within an Ecosystems Approach to Fisheries in South Africa.

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South Africa's small pelagic fisheries are moving towards management using an Ecosystem Approach to Fisheries (EAF), with Rights Based Management (RBM) as the key rights allocation system. While EAF strives to balance between, amongst others, ecological and social economic objectives, RBM is driving the sector towards economic efficiency. Within EAF itself, there are still underlying mismatches between the two top objectives: 'human wellbeing' and 'ecological wellbeing', in effect requiring better balance between the two objectives than at present. For example, fishers do not believe they should be competing with marine mammals and birds for the resource, yet this is one of the primary trade-offs that have to be made when setting the annual Total Allowable Catch (TAC) under EAF. Balancing between the two objectives could be achieved through acceptable trade-offs between the two objectives among all stakeholders within inclusive governance (ability to achieve). Implementation of RBM has had both positive and negative effects on the objectives for EAF. Of real concern are the negative effects of RBM on 'human wellbeing'. For example, fishers feel that RBM has weakened their bargaining position, thereby reducing their benefits. In addition, RBM has resulted in job losses and insecurity of employment within the sector. The most affected have been the most vulnerable – the low level workers - who ought to be the key beneficiaries of RBM. Thus prioritizing and protecting vulnerable groups and fishing communities needs careful consideration when creating RBM, even in the context of EAF. RBM has also had negative effects on 'ecological wellbeing' through practices such as increased dumping and high grading as part of industry's drive for increased efficiency under RBM. While scientists believe that variability is largely due to environmental conditions, fishers strongly feel that dumping, high grading and high fishing

pressure are the main factors. One of the positive aspects of RBM has been improved understanding among rights holders and fishers for the need to consider other organisms in the TAC and protection of these through establishment of MPAs, island closures, etc, through inclusive governance, thereby impacting positively on 'ecological wellbeing'.

Seaweed farming development in France: analysis of the undergoing decision process

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In France, the high mortalities affecting the oyster farming sector, since 2008, have been the opportunity for the main stakeholders to undertaken a broad consultation about the state of the activity and the way to exit the crisis. As a result some recommendations were formulated at national level, among which the diversification in seaweed farming. In France, this aquaculture is only in its early stage and development perspectives raise many issues such as technical and economic feasibility, environmental and governance issues. This presentation intends firstly to analyse the rationale which led to the recommendation of seaweed farming diversification and to what extent this could comply with the real expectations and needs of oyster farmers as regards diversification. Then it examines whether the oyster farmers are well positioned to contribute to the development of a macro-algae farming industry by focusing on production rights and interactions with others seaweed producers.

Regime shifts in coastal lagoon systems and the implications for governance

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Regime shifts are abrupt, long-term and significant changes in social-ecological system structure and function, with often considerable adverse impacts for human well-being. In coastal lagoon social-ecological systems, fundamental reorganization can be triggered when thresholds are crossed in one or a combination of diverse sub-systems or key social and ecological variables (e.g., institutional changes, populations of aquatic species, livelihood changes, salinity). The governance implications of regime shifts are profound because they often involve surprise, may be irreversible, and are likely to exacerbate social inequities. Moreover, regime shifts are multi-scaled, and governance arrangements developed to address specific components of a

particular social-ecological sub-system may fail to address approaching thresholds in other sub-systems. Drawing on the Chilika lagoon on the eastern coast of India, and Tam Giang (CauHai) lagoon in central Vietnam, we examine the differential impact of sub-system level changes, and reflect on the governance challenges associated with potential regime shifts in both lagoon social-ecological systems. Specifically, we point to governance strategies required to accommodate change and foster meaningful adaptation, and those governance arrangements and related strategies that help to contest unsustainable pathways.

6.5. Filling the information gaps towards small-scale sustainable fisheries management: building bridges between traditional and scientific knowledge

Chair: Jeppe Kolding

Collaborators: IUCN Sustainable Use and Livelihoods Specialist Group, CoopeSolidar (Costa Rica), European Bureau of Conservation and Development, International Collective in support of Fishworkers.

Proposed focus

Small-scale fisheries support the livelihoods and food security of many millions of fishers worldwide, and sustainable management of these fisheries is currently an emerging major focus for global action. From a scientific perspective, there are reasons to question the application of conventional management approaches (such as gear and size regulations) to small scale fisheries. The efficacy of these approaches in enhancing sustainability lacks strong empirical support. Small-scale fishermen and coastal and marine communities have in many cases managed their marine resources for a long time. Small-scale fishers that either defy the selectivity regulations, or are left alone without outside interventions, often develop a fishing pattern which, by continuous trial and error, is finely adapted to match the productivity of individual stocks. Generally, governmental and nongovernmental institutions have shown they are not prepared to accompany these local processes through assisting them with policy and technical support, and there is still a feeling from some sectors that these local experiences are weak and vulnerable, incapable of taking on the threats industrial fishing, massive tourism initiatives, pollution, climate change, among others, pose to a sustainable use of their threatened resources, their livelihoods and future. Here we aim to bring together perspectives on how we can critically apply fisheries science and tools to small-scale fisheries, while integrating them with community-based efforts based on traditional knowledge, in order to foster sustainable use of small scale fisheries and respect for the needs and rights of small scale fishers.

Is catch a function of effort or is effort a function of catch?

Jeppe Kolding

University of Bergen, Norway

One of the most influential guiding theories in natural resources governance is the “The Tragedy of the Commons” (TOC), which occurs when property rights are absent and access to a resource is open. In those open access circumstances, capacity control, privatization and area closures are the predominant means of contemporary management called for. The theory, as well as the underlying population dynamic models, assumes that the productivity, and corresponding catch, of fish stocks is a function of the fishing pressure with uncontrolled feedbacks. In many small-scale fisheries, however, with rather inefficient capture methods, it is an overlooked fundamental question whether the productivity is a function of effort, or effort a function of the productivity. If the latter case applies, the fishers will tend to behave like any other natural predator in the system, and the TOC narrative will become irrelevant. Direct and indirect evidence from several SSF around the world indicate that the biological productivity of the resource controls the fishing capacity much more than vice versa, and that effort thereby is self-regulated. Ironically, however, the tragedy arises from economic theory where capacity is deliberately replaced by efficiency as a prevention of TOC .

Catching the right size of fish: are size regulations harmful for small scale fisheries?

Paul van Zwieten

Wageningen University

Mesh size and minimum landing size regulations are found in virtually all fisheries management situations, small and large scale alike. The scientific basis of these regulations lies in the idea that one can maximise the theoretical potential yield of fish by delaying the age-at-capture to a certain optimum. Not doing so will result in so called “growth overfishing”. In large scale, well regulated fisheries these measures lead to a highly selective kill of sizes and species of fish, potentially disrupting population, fish community and ecosystem structure. In small scale fisheries these regulations lead to a continuous struggle between managers and fishers over illegal activities and the supposed harmfulness of catching juvenile fish, in spite that these ‘illegal’ fisheries can go on, and has gone on, for decades without any evidence that stocks or fish community collapse as a result of the transgressions. We will give examples where, from a production point of view, well-functioning small-scale fisheries exist where over 70% of the gears are illegal. Moreover, evidence is amounting that traditional minimum mesh size management provides a relatively

low sustainable yield. By contrast, by fishing on all species and sizes available – a so called “balanced harvesting pattern” - high yields can be achieved without causing much change in the structure of a fish community. Unregulated small-scale multi-gear fisheries, i.e. fisheries where management fails to impose size regulations, seem to automatically adjust to such balanced harvesting patterns thereby maximum production. From a food security point of view, then conventional size regulations could be harmful to small scale fisheries, and the rationale of management of small-scale fisheries needs to be rethought.

Temperate Prescriptions, Tropical frustrations

V. Vivekanandan

International Collective in support of Fishworkers, India

The post-colonial period saw developing countries in the tropics aping the developed countries in the temperate zone in terms of fishing technologies and fisheries development ideas. This led to increases in production but caused considerable distortions in the local fishery creating considerable fishing capacity, degradation of fishery resources, decline of bio-diversity and inequity in access to resource and sharing of benefits. Today, the crisis in the fisheries of the developing countries of the tropics is sought to be resolved by importing models of fisheries management that have evolved in an entirely different context, that of temperate eco-systems and governance systems of advanced capitalist societies. While these models are increasingly under challenge in their own contexts, they are often prescribed by donor organisations and local scientists brought up on a diet of western text books. Unsurprisingly, these models are non-starters as fisheries administrators find it difficult to match MSYs, TACs, quotas, etc., with local realities. This weakness in fisheries management is fertile ground for international conservation groups to enter the fray and impose ideas like MPAs that are causing havoc with livelihoods, especially that of small scale fishers. Small scale fishworkers—both men in harvest and the women in post-harvest—are today facing a double whammy: already victims of fisheries and coastal development, they are also becoming victims of conservation. The only way out of this dismal scenario is for the developing countries to recognise that they need to develop their own models of management and conservation working closely with their respective fishing communities and developing appropriate governance systems.

Integrating traditional and scientific knowledge in management of SSF: an example from Costa Rica

Vivienne Solís Rivera and Alejandro Muñoz

CoopeSoliDar R.L

Small scale fishing is not only a productive activity of great importance for food and economic security of most coastal and marine communities, but also a way of life from which a lot of experience and knowledge has derived. Some countries are starting to think about the importance and value of not only biological knowledge but also traditional and community knowledge as a mean to advance in a way that guarantees marine conservation but also includes a human right approach that in practice improves the life of these communities, reducing poverty levels and strengthening social resilience to changes (e.g. climate change). A small scale fishing cooperative in Costa Rica, CoopeTárcoles R.L. is a good example of fisherfolks taking this matter of knowledge generation in their own hands and then setting an example of low-impact sustainable use of fisheries. This concrete example will challenge us on how to go when we have bridged knowledge (traditional and scientific) and once this is done, how to move from the preservation view of marine conservation (the easy way out) towards more equitable and fair schemes that promote a sustainable use and improve livelihoods.

Panel sessions

Series 7

Friday, 28th of June

11.30 a.m. – 1.00 p.m.

7.1. Options for Ecosystem-Based Marine Management in Europe: Stakeholder preferences and governance models for the implementation of the Marine Strategy Framework

Chair: Judith van Leeuwen

Governance models for regional cooperation in support of implementation of the MSFD

Jan van Tatenhove (Environmental Policy Group of Wageningen University)

Jesper Raakjaer (Innovative Fisheries Management and Aalborg University Research Centre, Denmark)

Judith van Leeuwen (Environmental Policy Group of Wageningen University)

Luc van Hoof (IMARES, Wageningen University and Research Centre)

During the implementation process of the Marine Strategy Framework Directive (MSFD), Member States are expected to cooperate and coordinate at the regional sea level as well as arrange stakeholder involvement. However, the MSFD does not specify any governing structures to do so. The aim of this paper is to make a contribution to fulfil the gap in the MSFD by developing four governance models for regional cooperation and assess their impact on governance performance. The four models are based on the building blocks of participation/stakeholder involvement and decision-making power (binding or non-binding decisions): 1) Cross-border platforms; 2) Regional Sea Convention-PLUS; 3) Advisory Alliance and (4) Regional Sea Assembly. Secondly, the paper will initiate a discussion on how the alternative models will have an impact on governance performance. The assessment criteria for governance performance are: a) Capacity to cooperate; b) Securing coordination; c) Scale of institutional ambiguity, d) Efficiency in resource use and 5) Avoiding implementation drift.

The need for governance reforms to implement ecosystem-based marine management in European regional seas – A policy brief

Jesper Raakjaer, Judith van Leeuwen, Jan van Tatenhove, Luc van Hoof, Ronan Long, Lucio Carlos Freire-Gibb, Charlène Jouanneau, Astrid Hendriksen, Rebecca Koss, Piotr Margonski, Marloes Kraan

Marine governance in European seas is at a cross-road. There is strong political desire to move towards eco-system based marine management through integration of different EU policies or directives e.g. the Integrated Maritime Policy (IMP), the Common Fisheries Policy (CFP), Marine Strategy Framework Directive (MSFD) and the Bird and Habitats Directives, including NATURA 2000 to protect the environment, facilitate growth and employment from the blue economy, maintaining social and cultural heritage related to exploitation and utilisation of the European regional seas. Moving from political visions to practical implementation the governance landscape is very complex and institutional ambiguity (Leeuwen et al 2012) exists between the European, Regional and Member State level in the implementation of marine management. Institutional ambiguity refers to the interference zone between different institutional settings that come together in new policy practices. Furthermore, it has been demonstrated (Ounanian et al 2012) that in relation to stakeholder participation it is a dilemma that various sectors are unequally prepared to participate in this the policy process related to marine management. Based on the outcome of the governance work-packages of the FP7 project ODEMM this paper will provide a set of alternative tailor-made governance models for European regional seas (Baltic, Black, Mediterranean and North Atlantic) facilitating regional collaboration and coordination and allowing for genuine stakeholder involvement in accordance with the principle of subsidiarity.

Governance Strengths and Weaknesses to achieving Good Environmental Status in EU Marine Regions

Lucio Carlos Freire-Gibb, Rebecca Koss, Piotr Margonski, Nadia Papadopoulou
Innovative Fisheries Management and Aalborg University Research Centre,
Denmark

The ambitious Marine Strategy Framework Directive (MSFD) has been the focus of much marine research across Europe in the pursuit of achieving Good Environmental Status (GES) across the four European Union marine regions; Baltic Sea, Black Sea, Mediterranean Sea and North-east Atlantic. This research addresses the Strengths, Weakness, Opportunities and Threats (SWOT) of the current European marine governance structures and how this influence the achievement of GES. Results of the SWOT analysis were obtained from consulting experts and stakeholders in the different marine regions. This includes 30 interviews, an online

survey with 264 stakeholder respondents and focus groups with a total of 50 marine stakeholders from each European marine region and a central meeting in Brussels. The SWOT analysis identifies and addresses key governance issues for implementing the MSFD for the four European marine regions. This research presents these issues which are of benefit to national and European Union policy makers. This article can be seen as preliminary work, as much research is still needed to fully analyze the material obtained in ODEMM of the research project the authors are part of.

How to dance? The tango of stakeholder involvement in maritime governance research.

Astrid Hendriksen, Marloes Kraan, Judith van Leeuwen, Charlene Jouanneau
Mixed Methods

The need to Involve stakeholders in research related to maritime governance seems to be understood by many researchers and policy makers. Perhaps this can largely be contributed to the fact that many (EU) research calls ask for stakeholder involvement. How to involve stakeholders in a meaningful way is however not all that clear yet. The pan-European project Options for Delivering Ecosystem-Based Marine Management (ODEMM) was asked to develop options for governance for implementing the Marine Strategy Framework Directive in the EU. We developed a layered methodology whereby researchers consulted stakeholders at several occasions whilst developing governance options for future Ecosystem based governance in the regional seas. This layered approach made use of different methods of consultation, including structured and unstructured interviews, a survey and focused group discussions. This paper describes the methodology used and the roles and contributions of scientists and stakeholders in governance research. The paper ends with a discussion on the value of inclusion of stakeholders as well as the challenges associated with it in the light of the methods used.

7.2. Engaging gender for sustainable fisheries livelihoods and improved social wellbeing: perspectives from the global North and South

Chair: Easley Britton

Women and Social Cohesion: Preliminary Findings in Fishing Communities in Three EU Countries

Minghua Zhao & Esther Copete

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This paper aims to assess the contribution made by women in fisheries by investigating women's work and life in three EU countries: England, Belgium and the Netherlands, in some of the five dimensions of social cohesion: material conditions, passive relationships, active relationships, inclusion and equality. Specifically, it will look into some of the following aspects concerning women's work and life in fisheries: women's employment, income, health and education; their perception and feelings of safety, security and freedom; their access to and construction of networks amongst themselves and with others; their participation in the mainstream institutions; and their access to opportunities or material circumstances. In particular, the research will use social cohesion indicators identified by the Council of Europe to understand women's roles within their communities and analyse the way these in turn affect women's ability to contribute to social cohesion, and ultimately their community's well-being. Key preliminary findings will be discussed in this paper.

Women as agents of wellbeing in Northern Ireland's fishing households

Easley Britton

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This paper focuses on the gender dimensions of wellbeing in fishing households in Northern Ireland. The impact of change in the fishing industry on women's wellbeing is outlined and linkages are made between changing access to fish and changing roles of women in fishing households. The paper explores what this change means for how women perceive and pursue their wellbeing needs and aspirations and how they negotiate their needs with the needs of the household. In an occupation as gender biased as fishing it is argued that in order for fisheries management and policy to be successful, a profile of what really matters to people is important. In particular, the paper highlights how such priorities link to the complex and dynamic role of women in fishing households.

The hidden costs of gender-based violence in an Irish fishing community: a new pathway to policy and structural change

NC Britton

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Gender-based violence, especially in the context of domestic violence, is largely undocumented and hidden in fishing communities throughout the world. This affects not only individual's physical and psychological wellbeing but impacts the welfare of families, communities and society as a whole. This paper is presented from a psychotherapeutic practitioner perspective in the form of an in-depth case-study approach over the last 10 years within one of Ireland's main fishing ports, located on the rural western coast. Findings highlight and discuss factors contributing to the high levels of domestic violence and the acceptance of this violence within tight knit, often 'closed' communities. An important outcome is the need to develop gender mainstreaming, making explicit that which is often implicitly held around gender-based violence. The integration of these gender concerns in the development of fisheries policies, structures and management requires the inclusion of training that provides a therapeutic understanding for all actors within fisheries, in particular with regard to promoting self-care for fishers and their families.

Panel Discussion: Reflections, proposals and recommendations for a 'gender agenda' in fisheries and aquaculture

A summing up of key points and lessons from gender focused research in the global North and South with the aim of improving funding and support for gender mainstreaming in policy and practice.

7.3. Maritime Studies Celebration

Chair: Jojada Verrips

Convenor: Derek Johnson

The journal Maritime Studies has lived two incarnations. In the first from 1988 to 1994, under the editorship of Rob van Ginkel and Jojada Verrips, Maritime Anthropological Studies (MAST) was foremost a vehicle for the then newly blossoming speciality of Maritime Anthropology. In its second incarnation since 2002 as simply Maritime Studies (MAST), the journal has moved to embrace a broader range of social science disciplines. Throughout its history, MAST has been an important part of the deepening interest in the social sciences in fisheries, coastal

governance, and other maritime-oriented topics. This panel includes papers from contributors to MAST over the years, including the current Chief Editor of MAST Svein Jentoft and past editors Rob van Ginkel and Derek Johnson. Johnson's paper is an assessment of MAST's place in the field of maritime anthropology over the past quarter century. Those of Acheson, van Ginkel and Jentoft and Mikklesen are contributions from major figures in the field whose research trajectories continue to unfold new and important stories of people and the sea.

"MAST and the contours of maritime anthropology since the 1980s"

Derek Johnson

Department of Anthropology, University of Manitoba

In the years of the first edition of MAST (or Maritime Anthropological Studies as it was then known) from 1988 to 1994 the journal reflected a sense among a group of anthropologists of a new intellectual community of interest in the study of fisheries and coastal ways of life. After a hiatus of 6 years, the journal began publishing again in 2002 with a mandate that has broadened to include a much wider range of social science contributions. Taking that transition as a point of departure, this paper asks whether the changing orientation of the two editions of the journal reflect a broader trend in socio-cultural anthropology towards an erosion of the sense of focus of the earlier years or whether that change is simply a reflection of personnel changes at the journal.

The Social Dynamic and Economic Logic of Family Firms in the Fisheries

Rob van Ginkel

Department of Sociology and Anthropology, University of Amsterdam

In the 1970s and early 1980s, several maritime anthropologists pointed out that for a number of economic, social and psychological reasons, the performance of commercial fishing firms based on kin-based capital and labour was highly adaptive. For this reason, most crews in the North Atlantic area seemed to be organized around a core of agnatic relatives with women playing important shore-based roles. As of the early 1990s, the anthropologists' attention shifted away from 'classical' themes such as the social organization of fishing to issues of policy and management, particularly property rights regimes and rights-based fishing. Consequently, the topic of kin and family in the fisheries disappeared into the background. Nonetheless, it would appear that family firms are still predominant in the fisheries. In this paper, I will analyze their logic and dynamic in conditions of ecological, economic and political uncertainty, using ethnographic material from research in Dutch fishing communities on the island of Texel. I will devote considerable

attention to the issue of what rights-based management regimes have meant for the social organization of and kin involvement in fishing firms.

Challenging corporatism: Co-management in Norwegian fisheries.

Svein Jentoft and Knut Mikalsen

Norwegian College of Fisheries Science, Tromsø

Corporatism has a long history in Norwegian fisheries management. It has rarely been challenged by alternative modes of governance although - in practice - corporatism is tantamount to granting special privileges to a select group of stakeholders within a centralized system of management decision-making. Decentralized, bottom-up and more inclusive structures have not been considered an alternative, or even a supplement, although there is no lack of such co-management models world-wide. Why does corporatism – with its privileged access and restricted participation - still prevail in a context where stakeholder status in fisheries governance – at least in principle - has been awarded environmental organizations, municipal authorities and even consumer advocacy groups? Why have alternatives to the corporatist system of centralized consultation never been considered a serious alternative, in spite of the growing emphasis on fish as a public resource and fisheries management as human intervention in complex ecosystems?

Fishing Failure and Success in the Gulf of Maine: Lobster and Groundfish Management

James Acheson

University of Maine, Orono

This presentation examines the reasons management of the New England groundfishery has failed, while management of the Maine lobster industry has succeeded. After 35 years of management, groundfish stock sizes and catches are lower than ever while lobster stocks are at record high levels. We argue that the New England groundfishing industry is caught in a prisoner's dilemma from which it has failed to escape. That dilemma is due to the interaction of social, political and economic variables that have lowered the benefits of investing in rules to conserve fish stocks. The lobster industry, once marked by a piracy ethic, has been able to escape from its dilemma and, over time, develop a strong conservation ethic and institutions. Our evolutionary game theory model indicates that three sets of factors are involved in this cultural transformation of the lobster industry, which has led to support for better conservation rules and for law enforcement.

7.4. Fisheries Livelihoods

Chair: Johanna Forster

Injuries of the floating crew of the fishing fleet

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The analysis of accidents floating crew of fishing fleet of the northern water pool based on 320 industrial vessels with temporary disability and 950 case histories of fishermen, which required treatment in the surgical department. Works of increased danger to fishing vessels were maintenance and repair mechanisms of the engine room, with a trawl, maintenance of deck equipment, cargo handling by the crew; movement on ramps and decks, with hatch covers. Alcohol intoxication at the time of injury was recorded in 4.1% of the fishermen. The frequency of injuries fishermen while sailing in the Arctic region is 3.5 times higher than the moderate, because they operate in icing conditions decks, tools and equipment, low light jobs because of the frequent fogs. The major types of injuries from the fishermen are fractures, traumatic amputations and wounds. Severe species include traumatic injuries of fingers.

Rebuilding Livelihoods in Fisheries Communities of the West Coast of Newfoundland

Martha MacDonald, Peter Sinclair

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Based on research conducted in Western Newfoundland as part of an interdisciplinary project (Barb Neis, PI), we examine local labour market outcomes and challenges as a result of two decades of 'adjustment'. The initial period after collapse of the ground fishery in the early 1990s was focused on dealing with surplus labour in the industry and communities. Zone boards were tasked with diversifying local economies to absorb labour, and fisheries policies were shaped by the pressures on the industry as a key employer in rural areas of high unemployment. It is paradoxical, then, that twenty years later many local development initiatives cannot attract workers and the fishery faces serious labour renewal challenges. How did a labour surplus turn into a labour shortage? We argue that this paradox can be explained by the interplay of industry restructuring, fisheries and income security policies, external labour markets and household livelihood strategies.

On rights and powers: Tamil fishermen's struggle for inclusion and fishing access in post-war Northern Sri Lanka.

Joeri Scholtens

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Collective action literature in the context of natural resource governance has revealed a range of conditions which make it more likely for communities to build successful institutions to use their common property resources in a sustainable fashion (e.g. Ostrom 1990, 2002). Political ecologists, notably Agrawal (2001, 2003), have criticized this approach for being too a-political and a-historical, as institutions tend to be politically contested and control over resource access is as much a matter of “a bundle of powers” as it is of “a bundle of rights” (Ribot and Peluso 2003). This paper contributes to this discussion by analyzing the entanglement of two interrelated struggles of fisher organizations in post war Northern Sri Lanka: one for political rights vis-a-vis the Sinhala-chauvinist government, and one for access to fishing grounds with poaching Indian trawler fishers. This research explores to what extent this highly politicized and trans-boundary context limits the possibility of constructive institution building.

7.5. Images of the Coast: Converging and Conflicting Visions

Chair: Andrew Song

Organized by:

Andrew Song and María José Barragán Paladines

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Panel description:

Inspired by interactive governance theory and encouraged by the burgeoning scholarship on what images are, what they mean, and how they may improve maritime governance, the panel proposes to stimulate further discussion at the 2013 conference by illustrating examples of international research that explore the diversity, commonality, and divergence of stakeholder images. Representing a latent, but potentially influential part of the relationship people have about coastal resources and communities, the papers in the panel collectively aim to highlight the image formation and their implications to the governability of the coast, as captured in various contexts such as co-management, MPAs, coastal fisheries, and tourism.

The panel composes of multiple maritime settings including Korea and Ecuador. Discussion will follow paper presentations in the 1.5-hour period. It is hoped that the proposed panel would provide a valuable opportunity towards clarifying the ideas and help elicit further interests within the wider audience.

Imagining and reshaping natural resource governance: a case study of stakeholder images in South Korean coastal fishery

Andrew Song

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Governance initiatives such as community-based or co-management solicit a meaningful participation of a wider array of stakeholders, including the resource user communities. There is no proven formula in achieving productive stakeholder involvement to facilitate governance, despite thoughtful advices and thorough checklists emanating from years of research and practice. We have learned that context-specific operational constraints contribute to the difficulty of implementation, but what is also possible is that stakeholders hold disparate views about the resource, which influence the trajectory of governance initiatives as well as the relationships with other actors. We argue that stakeholders' images represent this underlying perspective and that these images need to be properly understood and reflected in governance strategies. Using coastal fishery in South Korea as a backdrop, this study explores stakeholders' images about four aspects of fishery environment (i.e., natural, socio-economic, government authority, and management interactions). Through an elucidation of their latent aspirations and concerns, we discuss several ways that the governance effort can be reshaped to be more consistent with people's imagination, highlighting the role of images in ushering more governable fisheries reality.

Images of the paradise: the human side of the Galapagos Marine Reserve

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Galapagos Marine Reserve (GMR) may still be perceived by many as a pristine area of biological diversity when in reality it is now considered one of UNESCO's threatened sites. Migration, urban development, tourism infrastructure and growing tourist numbers, make it possible the existence of different visions of the area from various interest groups. This paper illustrates what those images are and how they are determining the present status of GMR's governance. The findings show that the sometimes conflictive use of marine resources contributes to the formation of opposed images but it also arises commonalities in the reality visualization by the

leading characters. The pro-conservation and pro-development visions are leading the streams in the image formation though there are still interest groups supporting both alternatively. Through the understanding of these diverse and perhaps complementary visions, the challenges in GMR's governance can be understood and accordingly managed toward the successful achievement of the wellbeing for the social and natural elements of the system.

Multiple and Shifting Images within Fishery Management Institutions – The Case of Canada

Sharmane Allen

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State institutions responsible for governing fisheries may not operate from a single image or 'mental model' of why and how they should be governed. Instead, multiple and shifting images are often the reality given an institution's sub-structure, professional disciplines, diverse mandates, and changing political environment. The complexity may be amplified when conflicting and rigid images exist. Interactive governance theory argues that images play a persuasive role in fisheries governance, shaping how fisheries governors perceive issues, formulate solutions, and interact with participants in the fishing industry. It follows then that the performance of a governing institution is very much conditioned by images and that an exploration of these images is necessary to better understand the messages they communicate and actions they influence. This paper is an attempt to understand the governing images of the Canadian fisheries, based on the analysis of policies and other key documents adopted by Canada's Department of Fisheries and Oceans. It examines the composition and nature of images held by the department, explores reasons why they exist, and discuss the possible implications for the sustainability of Canadian fisheries, especially the small-scale fishing sector

7.6. Change and Adaptation

Chair: J.P. Johnsen (req)

Swimming against the current: building coastal livelihoods and institutions within the constraints of political control and marginalisation in Equatorial Guinea

Denis Hellebrandt and Edward Allison

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This paper aims to understand the livelihoods and vulnerability context of fisherfolk in Equatorial Guinea, and to critically appraise pathways for the integration of fisherfolk voices and concerns in coastal governance. The research was based on a participatory diagnostic approach, developed over eight weeks in 2012 in two sites in continental Equatorial Guinea, Central Africa. Besides diversification and gender-based division of labour, livelihoods show a conspicuous feature: ethnicity and local ties are key historical determinants of livelihoods but local values and norms now have diminishing importance in the construction of strategies. This apparent contradiction can be explained by a national political system which relies heavily on centralised control over communities. Vulnerability was highly context-specific and determined mostly by competition with “outsiders” and poor market access. Further, poverty was strongly affected by marginalisation, underlying overall weak conditions for the fair allocation of rights. Such a context poses enormous challenges to a project for participatory governance, which we discuss in the light of frameworks emphasising the cultural-cognitive aspect of institutions.

Tandilo fishing as a coping strategy for women in coastal fishing communities

Robert E. Katikiro, Edison Macusi and K.H.M. Ashoka Deepananda

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Many women engaged in fishing activities in coastal Tanzania use the gender-specific method ‘*tandilo*’, which involves dragging fine meshed nets (<1mm) or mosquito nets along the shoreline. While fisheries regulations in Tanzania consider *tandilo* fishing illegal due to catching juvenile fish, *tandilo* fishing is widely used by women using mosquito nets. It has markedly increased since aid agencies started distributing free nets to combat malaria. This study examines how local coping strategies can enhance or deter the well-being of women in fishing communities. Information was collected from five focus group discussions with *tandilo* fishers in

five villages of Mtwara, Tanzania. The findings reveal that tandilo offer ancillary food and income to many women and their families, yet fishing effort contributed and catches realized by women have not been investigated. The government must balance the confiscation of *tandilo* nets until they have figured out how to help these women escape poverty traps.

Counting moon, changing practices- exploring lunar cycles and vulnerability of subsistence fishery In Tarrafal, Cape Verde

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The subsistence fishery, mainly family activity, is seen as an expression of Creole cultural heritage. In this paper I examine role of memory and local knowledge for coping strategies in Tarrafal, a hub of artisanal tuna fishery in Cape Verde. The premise is that Creole culture due to its european-african ambiguity, is embedded in innovation and improvisation. Adaptation is reflected in the small scale of fishery, practice of various traditional techniques and switch between target species. The dilemma remains: would this suffice to trigger resilience to uncertainty over fish availability and access to fishing grounds in the presence of IUU fishery and state inability to act promptly. I argue that fishermen vulnerability is expressed in renegotiating new tendencies to shift professional focus and secure income diversification without losing their sense of identity and pride. Data is assembled both with fishermen and female fish vendors.

Currents of Change in Goa's Traditional Fishing Communities

Janet Rubinoff

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While the mechanization of fishing in Goa since the early 1970s – the “blue revolution” – promoted development of a significant economic sector, it also exacerbated conflict between mechanized boat owners (mainly of non-fishing backgrounds) and Goa’s traditional fishing communities, whose economic viability and way of life were threatened. Mechanization included the introduction of trawling and purse seining, which at first greatly increased the size of catches between the mid-1970s and the late 1990s. However, in addition to the negative impact on the livelihood of traditional beach seine fishers, destructive fishing methods and overfishing by trawlers and purse seiners have negatively affected resource management and the depletion of marine resources, resulting in lower catches since 2000. The State Government contributed to the conflict by failing to

enforce its own 1981 Fisheries Law, protecting in-shore zones for artisanal fishers and a monsoon fishing ban. My paper analyzes the response of Goa's artisanal fishers and fisherwomen to these significant challenges to their economic well-being and community identity over the past 50 years. Numerous demonstrations of traditional fisher organizations during the 1970s-1990s basically failed to protect their resource access and livelihood. However, other strategies, like the adaptation of new fishing technologies (semi-mechanization), increased education and access to alternative employment have enabled them to compete more successfully and have significantly transformed these communities, once one of the poorest sectors in Portuguese Goa. My research is based on extensive interviews over 15 years with women and men of the predominantly Catholic Kharvi community of Bardez, Tiswadi and Salcete talukas and the Hindu Pagi community of Canacona.

Climate change perceptions and adaptation preferences for enhancing marine food security among women in a remote Aboriginal community in Arnhem Land, Northern Australia

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The vulnerability of existing marine food systems in remote Indigenous communities in the Northern Territory is likely to be amplified by climate change impacts. This presentation reports on the results of a participatory research project exploring perspectives of Indigenous women from South Goulburn Island, Northern Territory, Australia on their dependence on marine resources, climate change, and their preferences for adaptation and Aquaculture for improved food security. The results showed the marine environment continues to play important roles in providing fresh food, nutritional benefits as well as contributing to the physical, emotional, cultural and mental wellbeing of women. People were found to have limited understanding of western concepts of climate change, but had observed many environmental changes in their landscape that were concerning to them. Indigenous women were receptive to Aquaculture enterprises and preferred low maintenance options – carried out in ways respectful to culture and directed by community. Peoples' preferences to adaptation and Aquaculture involved building community capacity and independence, drawing from customary knowledge as well as learning more about scientific western knowledge. Enabling greater collection of 'bush foods' and associated interaction with the marine environment could provide a key to improving community resilience and hence wellbeing in this region.

Panel sessions**Series 8****Friday, 28th of June
02.30-04.30 p.m.****8.1. European Marine Ecosystem Governance: Cases from Europe's Regional Seas****Chairs: Alyne Delaney & Katia Frangoudes**

This session presents research from VECTORS, an EU 7th FP project, which aims to elucidate the drivers, pressures and vectors that cause change in marine life, the mechanisms by which they do so, the impacts that they have on ecosystem structures and functioning, and on the associated marine sectors and society. One of the VECTORS' objectives includes evaluating current forms and mechanisms of marine governance to respond to these changes by designing new policies for the governance of marine ecosystem. To achieve the objectives of the project, semi-structured interviews were undertaken in the Baltic, Mediterranean, and North Seas as well as at the European Union level to investigate mechanisms of marine governance across the EU. The research identified stakeholder views on the primary pressures in each case study on successful marine management, causes of the pressures, conflicts within the area, as well as solicited possible solutions. An additional objective was to identify the attitudes of stakeholders and decision makers concerning the new forms and mechanisms of governance on marine ecosystems. Three cases studies to be presented in this panel include Sardinia (Mediterranean Sea), Puck Bay (Poland) and the Dogger Bank in the North Sea. These cases all relate to biodiversity protection or the implementation of conservation areas (Natura 2000 and marine protected areas). These case study papers, plus the European level case study, focus on the identification, review and evaluation of the current forms and mechanisms of marine governance by discussing the themes of collaboration, cooperation, and integration between institutions.

Transnational stakeholder involvement in multi-level marine governance: The Dogger Bank as a case study

Ina Krueger, Liv Berner, Rüdiger Wurzel, Jonathon Atkins, Alyne Delaney
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Competencies for marine environmental protection and fisheries management are shared between the European Commission and its member states. Thus, governance in these fields is often characterized by the presence of nested institutions on multiple layers and increasingly complex decision-making processes. This tendency

is accompanied by a general trend towards applying new, more inclusive decision-making processes, where stakeholders are directly and actively involved in environmental planning processes. This case study, based on semi-structured interviews with stakeholders and decision-makers, explores the stakeholder-based negotiation of a trans-national fisheries management plan for the newly appointed Natura 2000 areas on the Dogger Bank, showing how it functions as an example for how these new forms of marine governance are shaping decision making processes in an area where emerging plans for the establishment of offshore windparks and traditional fishing interests heavily compete with national conservation goals.

Governance of the NATURA 2000 sites in the Puck Bay, Poland: a societal perspective

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The Puck Bay, an intensively used Polish marine area, is also highly valuable from a biological point of view. Management of the area is subject to several top-down, new forms of governance initiatives, including Marine Spatial Planning and NATURA 2000 protection plans. This paper presents empirical data from qualitative, semi-structured interviews, and also governance analysis, to investigate the cooperation among stakeholders, arising from legal and administrative frameworks, and public consultation initiatives. Our study reveals that legal incentives undertaken at the central level are driving most of the decisions, and consultation with the administration responsible for managing the marine areas are not necessarily undertaken. Stakeholders consider the EU legislation as thwarting the economic development and failing to reflect local conditions. With stakeholder inclusion into the consultation process taking place only during its final phase, it is viewed it as a formality to fulfill legal requirements. They feel that the process is futile, lacks transparency, and does not guarantee that even when an agreement is reached, the solutions are implemented.

Stakeholders perception of the Marine Protected Area of Penisola del Sinis – Isola di Mal di Ventre (Sardinia, Italy)

Paolo Magni, S. Coppa, G.A. De Lucia, R. Malavasi, K. Frangoudes, A. Perilli

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The Marine Protected Area of Penisola del Sinis – Isola di Mal di Ventre (Sinis MPA, western Sardinia, Italy) is the second largest MPA in Italy and covers a surface area of 25.000 ha; 1.5% of this is a “no take-no entry” area.

Semi-structure interviews were conducted with stakeholders groups with the objective to gather their views on the MPA. For all stakeholders, the Sinis MPA is considered positively for the conservation of natural resources (e.g. sea urchins), though some felt that fish stocks have declined. Most interviewees asked for the development of new activities which can provide additional income such as through fishing tourism or infrastructure measures.

This presentation makes recommendations for improving Sinis MPA’s use such as through the establishment of a specific office dedicated to communication and dialogue, increasing controls (including MPA rangers) and increasing public awareness of the importance of the MPA through environmental education activities.

European Marine Ecosystem Governance: Stakeholder views on obstacles and advantages

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Based on empirical data gathered from semi-structured interviews, this paper presents the views of various stakeholders and institutions based at the European level concerning both the implementation of EU policies related to marine ecosystem and also views on invasive species, biological outbreaks, climate change, chemical pollution and over exploitation of fishing stocks, offering new possibilities for marine governance. The presentation provides an insight into obstacles and advances towards the implementation of an ecosystem based management in European regional Seas. This includes the lack of cooperation between institutions but also initiatives into areas of marine protected areas and the expanding role of international conventions (e.g., OSPAR, HELCOM, Barcelona convention).

8.2. Change and Adaptation

Chair: Derek Johnson

Impacts of hand-out offers on livelihoods of coastal fishing communities

Robert E. Katikiro, Edison Macusi and K.H.M. Ashoka Deepananda

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Hand-out offers from donors or government schemes are widely used in many developing countries for poverty alleviation. Hand-out offers however, do not address the constraints to the core livelihoods. This paper focuses primarily on hand-out offers given to two groups of fishers in two villages of the Mnazi Bay-Ruvuma Estuary Marine Park, in Mtwara-Tanzania. We conducted 18 in-depth interviews with community members and elucidated with information from 11 key informants. The study found that nearly US\$ 12,500 has been given to each group of fishers while the rest of the community got nothing. Nobody among those fishers made effort to save or resort to bank loan because their neighbours were handed out a boat for free. Not only this has caused discord, but also it has created a mentality of waiting for hand-outs and violation of human rights. To alleviate poverty, focus should be on sustainable development partnerships instead of simply giving hand-outs.

Adaptation Options for Coastal Communities: an Australian case study

Metcalfe, S. J., van Putten, E. I., Frusher, S.D., Tull, M., Marshall, N.

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Identifying effective adaptation strategies for coastal communities impacted by changes in climate, as well as changes in social and economic drivers, can be a difficult task due to the dynamic nature of ecosystems. This paper utilises stakeholder input, qualitative models and Bayesian Belief Networks (BBN), to assess climate and non-climate driven change in the coastal communities of St. Helens, Tasmania, Bowen in Queensland and Geraldton in Western Australia. The paper aims to provide a holistic view that considers the direct and indirect effects of change, assesses alternative adaptation strategies and assists with effective communication of information between stakeholders and policy-makers. The application of the modelling techniques allowed semi-quantitative predictions to be calculated in addition to the holistic assessment of key dynamics. We argue that the combination of BBNs and qualitative models can provide a dynamic (i.e., learning-

based) semi-quantitative approach to the assessment of impacts and identification of potential adaptation strategies.

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Coastal fishing communities are currently facing increasing number of pressures including demographic, environmental and institutional changes. Understanding how they adapt to these requires a holistic approach. Using a case study of coastal fishing communities in East Anglia, I determine what shapes individual and collective decisions about the future and evaluate the extent of impacts on social wellbeing. In particular, the role of occupational and place attachment on livelihood choices, and the willingness to accept change is examined. The implications of a wider recognition of place attachment and identity of coastal fishing communities in Europe are discussed in terms of their contribution to resource stewardship and to social well-being, both of which can influence participation in governance and commitment to sustainability. The methods and findings from this research provide some contribution to the development of social impact assessments and the application of wellbeing framework methodologies to fisheries.

8.3. Sea Sight: marine spatial planning, institutional arrangements and the role of knowledge

Chair: Martin Pastoors

Changes at sea are taking place rapidly. Traditional sectoral instruments and institutions to control and manage the sea are no longer adequate. There is no integrative framework for analysis and formulation of international marine spatial planning in terms of institutions, governance and knowledge. But there are many European projects that could deliver components for such an integrated framework. We evaluated the potential contribution of European research projects to an integrated framework.

The tenet of ordering claims at sea

Marloes Kraan, David Goldsborough, Luc van Hoof

IMARES, Institute for Marine Resources and Ecosystem Studies, Wageningen University

With a rapid increase of the use of the seas and oceans the call for arranging these different claims increases. In governance processes of marine spatial planning it is widely acknowledged that attributes such as participation, transparency and legitimacy are of importance. Less attention is being rendered to underlying principles and world views that shape the goal of marine spatial planning.

In this article we will visit the three orders of governance and use these to illustrate how the underlying principles can be applied to a marine spatial planning process. We will use the case of implementation of the European Natura 2000 policy on the North Sea Dogger Bank, an area where European Union policy, national policies and several stakeholder groups' interests come together, to illustrate how these tenets can facilitate the ordering of claims at sea.

MSFD implementation in the Netherlands: the challenge of linking science to policy.

David Goldsborough, Marloes Kraan, Martin Pastoors

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The EU Marine Strategy Framework Directive (MSFD) aims to achieve Good Environmental Status (GES) in Europe's seas by 2020. Implementing this directive in the different European countries poses several challenges to the knowledge base underpinning the implementation. We analysed the role of policy makers, scientists and other stakeholders in implementing the first phases of the MSFD in the Netherlands. The analysis is based on a discourse analysis approach and uses boundary work as a key concept. Semi-structured interviews were conducted with policy makers, civil servants, scientists, and other stakeholders during the period December 2012 – February 2013. The main focus was on the link between the EU MSFD policy documents and the Dutch policy documents and on the quality of the produced knowledge. The analysis has shown that the role perception and expectations of actors often gave rise to misunderstanding. In the paper we will draw conclusions on the effectiveness of the boundary work between science and policy in the implementation of MSFD in the Netherlands.

Crossing borders? The role of science in applied maritime research projects

Marloes Kraan, Sara Gonzales de Uzqueta de Lorza, David Goldsborough, Diana Slijkerman, Martin Pastoors

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Many European maritime research projects are dealing with policy related questions that involve governance aspects. Applied research institutes are mostly involved in the “knowledge” components of these projects but increasingly also in the governance components. Knowledge organizations are asked to provide underpinning to specific policy questions in the form of scientific knowledge, models or monitoring data. Boundary work is applied to ensure their position as both a scientific and as a policy-relevant institute. This paper addresses the role of knowledge (science) and knowledge actors (scientists) within the overall governance set-up. We evaluated how do the knowledge components (project outputs) fit within the overall policy cycle of decision-making. We analyzed three research projects in which IMARES, an applied marine research institute in the Netherlands, was involved. Project documents were reviewed and scientists, policy makers and stakeholders were interviewed via semi-structured interviews. Comparisons will be presented on the type of boundary work that occurred in the different project and how that can be related to the institutional setup of research-for-policy projects.

Opportunities and barriers for multiple-use in the North Sea

Katrine Soma, *Josien Steenbergen*, Christine Rockman, Robbert Jak and Jan-Tjalling van der Wal

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In the southern part of the North sea, in the coastal waters of Denmark, Germany and the Netherlands, a diversity of interests exist in the marine area. Claims for space are increasing with new uses like wind turbine parks, increased protection of ecologically valuable areas and already existing uses like shell production and fishing, tourism, recreation, shipping, transports and sand extraction. The multi-dimensional reality observed does not logically comply to the current situation: only single activities get access and rights to different areas. The main aim of this article is to address multiuse as a way to meet identified needs, as well as to foresee conflicts that will arise. Multiuse in this context is seen as combination of different uses in specific areas, including offshore wind parks, nature conservation, aquaculture and fisheries. Before multiuse is analyzed more in detail, stakeholder needs and preferences in the Southern North Sea is identified by means of a questionnaire survey involving key stakeholder representatives in respective countries. Based on this, multiuse options are suggested which can meet the identified stakeholder

wishes in different ways. Subsequently, practical implications for implementing multiuse appearing in the real situation are identified by looking at geographical requirements of different uses and juridical frames for getting access. Although the case study in the southern North Sea and related practicalities are central to this article, a theoretical framework is developed to analyze rationalities of potential multiuse practices. Strategies of collaboration and negotiation are important elements in this framework. To conclude we encourage a synergistic use of the sea that can only be achieved by a well prepared planning process which is aiming at representing all potential users throughout the process.

8.4. South East Asia

Chair: Akifumi Iwabuchi (requested)

Fishing Communities in Southern Vietnam: Development and Consequences

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In the last decade two fishing communities in southern Vietnam, i.e. Dat Mui and Song Doc in Ca Mau province, have gained significant success in economics. The former village usually uses the fixed catching methods, while the latter does the roving ones, both of which have recently been introduced under the new policy of Doi Moi. Because of overexploitation or excessive competition, however, the haul is now on the decrease, and then more uncertainty among vulnerable fishermen is being created. New rich boat owners sweat poor labourers without any formal contracts or insurance schemes; there is no quasi-kinship relation between them. Most fishermen pay attention too much upon economic issues, but they seem not to have the least interest in social matters such as alcoholism, drug addiction, prostitution, or criminal offenses inside communities. The deterioration is also injurious to family affiliation; parentages as well as matrimonial ties are becoming frangible.

Seeing from the sea: coastal networks and conservation in East Kalimantan, Indonesia.

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More than before, marine conservation research pays attention to the social conditions under which marine conservation is carried out. However, a persistent land bias and a common deductive, institutional approach to social organization lead to the perception of maritime communities as local, place-based entities, tied to the shore. Alternatively, I discuss community as network, in the performative sense, constituted in interactions and exchanges that relate to, but are not confined to, places. Insights from multi-sited ethnographic research in and beyond the coastal zone of Berau (East Kalimantan, Indonesia) show how maritime actors sustain durable relations across a vast marine space. Their relations of family and business are trans-local, dynamic and sea-based. This includes the organization of illegal fishing through extensive patron-client networks. Considering existing conservation plans and practices from a sea-based network perspective, sheds some light on the failure of conservation organizations to get a foothold in the region.

Accommodating Mobile Maritime Livelihoods of Sea-Nomad Populations in the Indonesian region of the Coral Triangle

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Scattered throughout island Southeast Asia are groups of specialist maritime populations known collectively as the Sama-Bajau also commonly referred to in academic and popular literature as 'sea nomads' or 'sea gypsies'. These groups depend almost exclusively for their livelihood and spiritual wellbeing on the highly biodiverse island, coral reef and oceanic environments in the region. In this paper I explore the culturally defined living spaces and livelihood behaviour of Sama-Bajau and examine responses to historical, social, economic, and environmental circumstances. I show that the application of labels evoking nomadic behaviour has been misleading and resulted in inappropriate representations of Sama-Bajau. Furthermore, such representations have resulted in negative associations of Sama-Bajau with the environment in much of the conservation literature where they are frequently portrayed as 'threats'. Such responses tend to ignore social complexities of migratory maritime-orientated livelihoods. I highlight the need for application of a more socially and culturally informed lens to consider how conservation initiatives

in the region will afford special attention to such groups who engage in mobile livelihood strategies.

8.5. Fisheries Management

Chair: Troels Hegland (req)

The Faeroe Islands' Fisheries Effort Management System – controversies and challenges of a fisheries dependent micro-nation

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Based on a comprehensive literature review, as well as interviews carried out in August 2012 in various places on the Faeroe Islands, the authors present and discuss some of the main controversies around and challenges facing the Faeroese fisheries effort management system, as it struggles to find its feet in a context of changing international requirements to fisheries management, globalisation, questions around the sustainability of its system, and poor profitability in parts of the sector. The Faeroe Islands constitutes an interesting case both as a truly fisheries dependent micro-nation as well as a case of a very well-established management system combining the use of total allowable effort and days-at-sea with extensive use of closed areas.

Teasing out the causal pathways behind fisheries management outcomes: A case study of Chilean *caletas*

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We compare seven fisheries management organizations along the Chilean coast to understand factors that contribute to successful management outcomes. Previous work has shown social capital and leadership to be two important factors contributing to outcomes of collective action. However, Ostrom and others have identified a number of additional factors. We therefore use a mixed methods approach to examine a range of plausible contributing factors. These include network structure and metrics for networks of communication of area management information and Local Ecological Knowledge, conflict resolution mechanisms, characteristics of leaders and a range of attitudinal variables related to the perceived function of the management organizations among users. Outcomes are measured as

a multi-faceted index comprised of social and ecological variables. Results show that multiple alternative causal pathways give rise to similar outcomes. We discuss these in more detail and examine similarities and differences in their respective pattern of contribution to outcomes.

Bottom up initiatives – fishers incentives and space of opportunity within the management system

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The top down approach to European fisheries management has shown its shortfalls and even the commission call for bottom up approaches. But how should this take place? Under which circumstances would fishers take co-responsibility and which forms for organisations could gain a room within the present management regime? The paper discusses types of incentives within the market, state and community spheres for fishers to organise and share knowledge internally and with management. As a part of the incentive set up the opportunities for such organisations to gain legitimacy and a role in the present management is discussed. Finally the interest of the individual to participate in such knowledge sharing bottom up initiatives is discussed, likely in a game theoretic approach.

Can incentive-based change in fisheries contribute to adaptive co-management? The case of the Scottish Conservation Credits Scheme

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Through the case of the Scottish Conservation Credit Scheme (SCCS), this paper explores the extent to which the adoption of incentive-based arrangements can lead to the adaptive co-management of marine fisheries. Adaptive co-management has emerged as an integrative approach to dealing with the complex interplay between ecosystems dynamics and multi-level governance arrangements. While much attention in the adaptive co-management literature has been given to processes of social learning and self-organisation, as well as modes of collaboration and adaptation, less analysis has been given to the role and design of incentives. Both monetary and non-monetary incentives are an inherent component of natural resource management. Voluntary incentive-based fisheries management has emerged as an alternative to more centralised regulatory approaches that aim for specific goals, such as reducing discards, avoiding catch at vulnerable life-stages or in specific habitats, or reducing by-catch of threatened and endangered species, by

changing fishing practices, within broader aims of rebuilding overexploited stocks. The SCCS is an example of one form of incentive-based arrangement we termed a 'behavioural credit scheme'; characterised by the adoption of flexible measures to intentionally change gear efficiency and effort allocation to meet Scotland's obligations under the European cod recover plan. The results indicate that while the SCCS was initially able to implement effective incentives agreed upon by a wide group of fishery stakeholders, the ultimate utility of incentive-based management was limited by the status of the stock and rigid time frames set by the EU, which together affected the economic viability of the fleets involved. This has in turn undermined the extent to which the SCCS has been able to implement flexible, voluntary incentive-based recovery of cod stocks and questions the extent to which incentive-based arrangements can contribute to adaptive co-management.

What's in it for society? The societal worth of fisheries

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It has been noted that formal objectives for fisheries management policies, as expressed in sector legislation, in general are multiple and inconsistent, and that they as such are poor guides for deciding and evaluating management interventions. While we acknowledge that the explicit value statements in legal texts may be fuzzy and symbolic, this underestimates the possibility of reading out from legal prescripts and the institutionalized practices they support the values and concerns a society holds the fisheries sector accountable for. In this paper, we examine and compare the worth of the fisheries to society in four countries: Norway, Faroe Islands, Iceland and Greenland. We do that by way of a discourse analysis of selected policy processes, identifying patterns by with the dominant images of and value matrices ascribed to the fisheries are expressed.

Poster Presentations

Thursday, 27th and Friday 28th of June during lunch

A knowledge-based tool for EAF implementation in the South African sardine fishery

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Learning and knowledge in the Invisible Seascape

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Fishing, Tourism in Arenzano, La Dolce Vita

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General Information about MARE and Maritime Studies

Centre for Maritime Research

The Centre for Maritime Research (MARE) is an interdisciplinary social-science network organization devoted to expanding knowledge about the human dimensions of coastal and marine life, including their governance. Its objective is to provide a stimulating intellectual climate for academics and policymakers in Europe as well as in the South. Although MARE limits its action radius to the social sciences, it seeks active collaboration with other disciplines. It strives to maintain a balanced mix of academic and policy-oriented research. MARE takes a global perspective, emphasizing the coastal zones of Europe, Asia, and Africa. It covers a broad spectrum of topics, drawing on expertise from fields such as law, history, economics, political science, public administration, anthropology, and geography.



MARE was established by the University of Amsterdam and Wageningen University in 2000. It has now joined with the University of Tromsø (Fisheries College) and Aalborg University (IFM) for realizing the journal Maritime Studies (MAST) and the People and the Sea conferences. Further collaboration between these four university institutes is envisaged.

MARE engages in three platform activities:

- The organization of biennial People and the Sea conferences, generally in Amsterdam;
- The publication, in association with Springer, of the open access journal Maritime Studies (MAST); and
- The publication, also in association with Springer, of the MARE Publication Series.

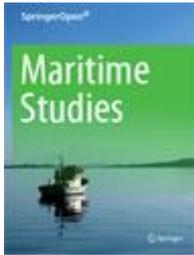
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Svein Jentoft
Editor-in-Chief

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